TRANSMITTAL OF RESPONSES TO U.S. ENVIRONMENTAL PROTECTION AGENCY AND OHIO ENVIRONMENTAL PROTECTION AGENCY COMMENTS ON THE PRE-FINAL (90%) DESIGN OF THE ON-SITE DISPOSAL FACILITY

09/27/96

DOE-1405-96
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RESPONSES

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SEP 27 1996

DOE-1405-96

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Dayton, Ohio 45402-2911

Dear Mr. Saric and Mr. Schneider:

TRANSMITTAL OF RESPONSES TO U.S. ENVIRONMENTAL PROTECTION AGENCY AND OHIO ENVIRONMENTAL PROTECTION AGENCY COMMENTS ON THE PRE-FINAL (90%) DESIGN OF THE ON-SITE DISPOSAL FACILITY

This letter transmits the responses to U.S. Environmental Protection Agency (U.S. EPA) and Ohio Environmental Protection Agency (OEPA) comments on the Pre-Final (90%) Design of the On-Site Disposal Facility. Following a request for extension from EPA, these responses were due to U.S. EPA and OEPA on September 28, 1996, thirty days after receipt of comments from OEPA.

Please contact Rod Warner at (513) 648-3156 if there are any questions regarding this transmittal.

Sincerely,

Johnny W. Reising
Fernald Remedial Action
Project Manager

FEMP:Warner

Enclosure: As Stated

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Attachment 1

Responses to U.S. EPA Comments

RESPONSE TO USEPA TECHNICAL REVIEW COMMENTS ON THE PREFINAL DESIGN PACKAGE FOR THE ON-SITE DISPOSAL FACILITY

GENERAL COMMENTS

Prefinal Design Calculation Package

Commenting Organization: U.S. EPA
Commentor: Saric
Section #: Not Applicable
Page #: NA
Line #: NA
Original General Comment #: 1

Comment: U.S. EPA's original general comment 2 on the Intermediate Design Package (IDP) requests that the U.S. Department of Energy (DOE) provide additional information regarding the flood protection berm on the west side of the On-Site Disposal Facility (OSDF) and its proximity to the 2,000-year floodplain elevation.

DOE's response states that Drawing X-6 of the IDP plan indicates that the 2,000-year floodplain does not extend closer than 2,000 feet to the OSDF; therefore, there is no need to limit the OSDF perimeter berm to elevation 596.0 mean sea level (msl). DOE also states that the 596.0 msl elevation of the 2,000-year maximum probable flood (MPF) was not a design criteria. The revised calculations of the ID demonstrate that runon and runoff from the MPF design storm will be fully controlled by the OSDF surface water management system, and runon and runoff will not encroach upon the OSDF.

The statement that the MPF elevation of 596.0 msl is not a design criteria is incorrect. Under parameters for design, the IDF calculation package (see Section 13-1, Data Verification, Sheets 2 and 3 of 45) states that rainfall for the storm event used in the design method includes the following:

Storm Event	Rainfall (inches)
2-Year, 24-Hour	2.55
2.5-Year, 24-Hour	4.7
2,000-Year, 24-Hour	13.0

Therefore, it appears that the MPF elevation is, in fact, a design criteria. U.S. EPA also disagrees that the calculations of the IDP demonstrate that runon and runoff will be fully controlled by the OSDF surface water management system and will not encroach upon the OSDF.

To properly demonstrate that the MPF will not adversely affect the OSDF, U.S. EPA recommends that DOE adhere to the following procedures:

- Use a water surface profile model (such as HEC-2) of the entire watershed, concentrating on the effects on Paddys Run Creek, the entire Fernald Site, and surrounding areas within the watershed.

- The effects of the 25-, 100-, and 2,000-year storms should be modeled.

- Predevelopment and postdevelopment of the entire watershed should be considered.

These procedures will determine whether the MPF would directly affect the OSDF.

Response: The reviewer appears to be using the terms for maximum probable flood (MPF) and the flood from a 2,000-year, 24-hour storm event interchangeably as if they are the same. The MPF elevation is calculated using the probable maximum precipitation (PMP) event, which is considered to be the 100,000-year storm. The 2,000-year flood elevation is calculated; using the 2,000-year storm. The 2,000-year, 24-hour storm is a design criteria; the MPF and PMP are not design criteria. Based on the work performed by Parsons [1995], the water surface elevation for the 2,000-year storm event is 536.0 ft MSL as shown on Drawing X-6. Also note that the Parsons [1995] report includes a HEC-2 model for Paddy's run for the 100, 500, 2,000, and PMP storm events.

Action: No action is required.

Groundwater Detection Monitoring Program

Commenting Organization: U.S. EPA Commentor: Saric
Section #: Not Applicable Page #: NA Line #: NA
Original General Comment #: 1

Comment : The overall groundwater monitoring approach for the glacial till aquifer is technically acceptable and provides the best compromise between regulatory groundwater monitoring requirements and the hydrogeologic constraints. The overall groundwater monitoring approach for the Great Miami Aquifer (GMA) may be acceptable but requires additional justification. There are several specific areas that require clarification and additional information. These items are discussed more fully in the specific comments 15 through 20.

Response: Acknowledged. See responses to specific comment.

Action: No action is required. See responses for specific comments.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: Not Applicable Page #: NA Line #: NA
Original General Comment #: 2

Comment: The text states that intrawell trending will be conducted on concentration data collected from the till and Great Miami aquifers (GMA). The text further states that upgradient and downgradient concentration data will be compared after aquifer restoration activities are complete. DOE should: (1) justify why upgradient and downgradient comparisons cannot be made before completing aquifer restoration activities; (2) describe how the baseline for each well will be

established if intrawell trending is to be conducted; and (3) provide timeframes when intrawell trending will change to up to down gradient comparisons.

DOE should discuss each of these issues for both the till aquifer and GMA.

Response: (1) Why upgradient to downgradient comparisons cannot be made before completing aquifer restoration activities - up-to down-gradient comparisons are typically employed for unaltered groundwater flow situations. Although up- to down-gradient comparisons could be made prior to completion of aquifer restoration in the OSDF area, the aquifer restoration activities are expected to change the gradients and flow directions. Upgradient in the GMA is currently west, while downgradient is east. The GMA aquifer restoration activities are anticipated to reverse this, and the variation of pumping that is typically associated with groundwater extraction systems optimization is anticipated to cause further dynamic variation over time. For these reasons, intrawell trending is a better mechanism to track potential changes of GMA groundwater quality in the OSDF area. Text within Section 4.0 (currently at Section 4.4.1 Trend Analysis Results) will be revised to briefly discuss this. Unlike flow in the GMA, the up- and down-gradient designation of fluid movement in the till is difficult to assign, as is discussed in the current Section 3.3 Hydrogeology. For this reason, intrawell trending is a very good mechanism to track changes in glacial till perched groundwater quality in the OSDF area.

(2) How the baseline for each well will be established if intrawell trending is to be conducted - Text in Section 4.0 will be revised to indicate how baseline will be established for each monitoring point. Briefly stated, 12 sampling events will occur, and at the conclusion of those, an evaluation will be made as to whether sufficient data exist to ascertain the type of distribution of the data, and from that to select an appropriate statistical method and associated statistical measure (e.g., arithmetic or geometric mean, upper confidence limit, upper tolerance limit, etc.); this will be the basis for determining whether baseline has been established. This determination is anticipated to be made on a monitoring-point-, system-by system- (e.g., LCS, LDS, glacial till monitoring, GMA monitoring), and cell-by-cell-specific basis. Over time, for each cell, four different baselines might exist based upon combination of the two following basic distinctions: (1) prior to vs. after completion of cover for an individual cell; and (2) prior to vs. after remediation of GMA groundwater in the OSDF area. The first is anticipated to be of particular importance for the LCS and LDS (and possibly for the horizontal well in the glacial till), while the second is anticipated to be of particular importance to the GMA monitoring.

(3) Timeframes when intrawell trending will change to up-to down-gradient comparisons - Text in Section 4.0 will be revised to indicate that up-to down-gradient comparisons will be made for GMA wells after remediation of the GMA underlying the OSDF area is completed, and after GMA flow directions in the OSDF area normalize.

Action: See response to each issue.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 6.0 Page #: 6-1 Line #: NA
Original General Comment #: 3

Comment: The text presents a very general discussion of sampling that focuses on groundwater sampling and does not address monitoring or sampling leachate. DOE should expand the discussion to address specific sampling procedures for leachate.

Response: This text will be revised to address sampling and analysis requirements for the LCS and LDS sampling specified in sections 4.0 and 5.0.

Action: As per response.

Borrow Area Management and Restoration Plan

Commenting Organization: U.S. EPA Commentor: Saric
Section #: Not Applicable Page #: NA Line #: NA
Original General Comment #: 4

Comment: The introduction to the Borrow Area Management and Restoration (BAMR) Plan states that management and restoration activities will be conducted to obtain on-site borrow soils for construction, filling, and closure of the OSDF. Section 4.6 of the BAMR Plan contains one paragraph that briefly describes the restoration activities planned for the borrow area; however, this is the only text that discusses restoration activities. The BAMR Plan should be revised to include additional detail regarding borrow area restoration activities.

Response: Borrow area restoration activities have three principal components: (I) final grading to elevations shown on Drawing G-12; (ii) revegetation with grasses as specified in Specification Section 02930; and (iii) decommissioning of the sedimentation basin in accordance with the SWMEC Plan.

Action: The BAMR Plan will be revised to include additional detail regarding borrow area restoration activities in a new section of the plan.

Construction Quality Assurance Plan

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 5.4, 8.10, 8.12 Page #: NA Line #: NA
Original General Comment #: 5

Comment: The Construction Quality Assurance Plan has been revised and is acceptable. However, the document still implies that only the construction quality control (CQC) consultant will certify that the installation is acceptable. The OSDF subcontractor has a contract to construct the OSDF and has a contractual responsibility to build the facilities according to the plans and specifications. It

is common practice in the construction industry to have the constructor certify that the project has been completed in accordance with the contract documents. U.S. EPA still believes that such certification should be required of the OSDF subcontractor as well as the CQC consultant.

Response: DOE agrees the OSDF Subcontractor has a contractual responsibility to build facilities according to the plans and specifications. The OSDF Subcontractor has many requirements for certification of his work which are enumerated in the Technical Specifications for the contract. The CQA Plan is intended to enumerate the requirements relative to the work certification by the third-party CQ Consultant.

Action: No action is required.

Impacted Materials Placement Plan

Commenting Organization: U.S. EPA Commentor: Saric
Section #: Not Applicable Page #: NA Line #: NA
Original General Comment #: 6

Comment: The impacted materials placement plan describes procedures to be used for materials acceptance, placement, compaction, and quality assurance (QA) and quality control (QC) activities during the operation of the on-site disposal facility. The only aspect of material acceptance and placement that is not clearly described is the length of material that will be accepted from the dismantling operations at Operable Unit (OU) 3. The plan should specify the maximum length for material acceptance and that this maximum length is necessary to ensure that soil placed around the material is properly compacted.

Response: The IMP Plan states in Paragraph 4.3, page 4-1, that the maximum length of metals or other components of a building structure shall be 10 feet (3 m). No maximum length of regularly (i.e., square, rectangular, etc.) shaped items is given because compaction can be readily achieved around these regular shapes.

Action: No action is required.

Postclosure Care and Inspection Plan

Commenting Organization: U.S. EPA Commentor: Saric
Section #: Not Applicable Page #: NA Line #: NA
Original General Comment #: 7

Comment: The postclosure care and inspection plan (PCCIP) is not complete. Various sections (such as Section 5.3) are left out for future development, and the date for completing these sections is not provided. The PCCIP should be completed and, if certain sections are to be completed later, the date for completing such sections should be specified.

Response: Section 5.0, System Planning Requirements, of the OSDF Remedial Action Work Plan identifies the specific schedule for finalizing the OSDF PCCI Plan. The PCCI Plan has been revised and resubmitted in accordance with that schedule.

Action: No further action is required at this time.

SPECIFIC COMMENTS

Design Criteria Package

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 1.5.1 Page #: 1-9 Line #: NA
Original Specific Comment #: 1

Comment: The text lists various standard building codes used to support the design of the OSDF. However, the text does not include a separate subsection in Section 1.5 to cite all appropriate standard building codes used in the design of the OSDF. The text should be revised to include a subsection in Section 1.5 that lists all appropriate building codes used in the design of the OSDF.

Response: A new Section 1.5.5 entitled "Standard Building Codes" will be added to the final Design Criteria Package (DCP). The specific standard codes used in the design of the OSDF will be listed in this section.

Action: As per response.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.4.9 Page #: 2-39 Line #: NA
Original Specific Comment #: 2

Comment: The text states that immersion procedures for representative geomembrane specimens should be conducted in accordance with U.S. EPA Method 9090. The text should be revised to cite the reference and include it as a reference in Section 2.4.10.

Response: The U.S. EPA Method 9090 will be cited in full in the final DCP and a complete reference added to Section 2.4.10.

Action: As per response.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.5.3 Page #: 2-51 Line #: NA
Original Specific Comment #: 3

Comment: The text states that liquid in the leak detection system of an OSDF cell should flow by gravity through a double-walled HDPA pipe, which penetrates through

the liner system to a leak detection system manhole located on the west side of the OSDF. The text should be revised to discuss the seal for the liner system around the double-walled HDPA pipe.

Response: The following text will be added at the appropriate location of the final DCP. "The liner system pipe penetration should be designed to be watertight to prevent leakage through the penetration. Materials used to seal the penetration should have similar physical and durability characteristics as the materials used to construct the liner system.

Action: As per response.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.8.3 Page #: 2-90 Line #: NA
Original Specific Comment #: 4

Comment: The original specific comment 3 on the IDP requests that DOE provide additional information on the discharge of storm water runoff from the OSDF watershed and on restricting the discharge rate to the predevelopment rate. DOE's response indicates concurrence with the comment but does not address how the restricted discharge rate will be implemented. The certified for construction (CFC) design package should address how the restricted discharge rate will be implemented, and the text should be revised to indicate that the CFC design package will incorporate this information.

Response: Stormwater runon/runoff from the site will be diverted to one of several sediment basins. Because specifics regarding the actual construction areas were not defined, the sediment basin design information presented in the Prefinal Design Package is preliminary. As stated in the executive summary to Section 12.2 of the calculations, only initial estimates of sediment storage volume was calculated. Additional calculations will need to be performed as part of the development of the certified for construction (CFC) design package.

Action: As per response.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 3.2.7 Page #: 3-15 Line #: NA
Original Specific Comment #: 5

Comment: The text identifies administrative requirements for the design package regarding the preparation of project deliverables, and a list of cost estimates that should be prepared for implementation. U.S. EPA recommends that the text be revised to include a cost estimate for Borrow Area Restoration.

Response: Borrow area restoration is considered part of the OSDF project. Accordingly, a cost estimate for borrow area restoration is included in the overall cost estimate prepared for the OSDF project.

Action: No action is required.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: Appendix B Page #: 3-3 Line #: 24
Original Specific Comment #: 6

Comment: The text briefly addresses the design life of the liquid waste transfer system and its ability to accommodate maximum and minimum flow rates expected during and after the OSDF is capped. The postclosure plan, which is included in the PDP, provides additional information regarding the design life of the system. The text should be revised to include a reference to the postclosure plan.

Response: DOE has reviewed the Appendix B Detailed Facility Description/Functional Requirements of the Design Criteria Package, and the OSDF Post-Closure Care and Inspection Plan, especially its Sections 2.3 Functional Requirements and 2.4 General Design Criteria, and 2.5 Other Criteria, and can find no information in the postclosure plan regarding the design life of the system. Therefore, DOE sees no reason to revise the text.

Action: No action is required.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: Appendix B Page #: 8-1 Line #: Table 8.0
Original Specific Comment #: 7

Comment: Table 8.0 in Appendix B does not provide correct project milestones dates. The table should be removed or revised to provide correct project milestone dates. The correct dates are included in the August 1995 draft remedial design work plan for OU2 and subsequent, U.S. EPA-approved revisions of the milestone dates.

Response: Table 8.0 will be deleted from Appendix B.

Action: As per response.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: Appendix F Page #: NA Line #: NA
Original Specific Comment #: 8

Comment: Appendix F contains a table that provides the volume of impacted material and a schedule for OSDF disposal. DOE indicated in responses to comments on the OSDF preliminary design package that Appendix F would be removed from the DCP and a meeting would be scheduled with U.S. EPA to present a revised concept of material flow. Appendix F should be modified by replacing the table

with text describing DOE's refined material flow concept and intentions for presenting the concept to U.S. EPA.

Response: DOE will remove Appendix F from the DCP for clarity. The appendix was a conceptual vision (e.g., starting point) for the engineering design firm to establish a basis for design. This vision has been refined as the design progressed. As to the material flow concept, a meeting was held on May 24, 1996 at which time DOE presented the Soil/Debris model. This model is a tool that DOE plans to use for material placement. The model is updated on a periodic basis to reflect new information.

Action: Remove Appendix F from the DCP.

OSDF Drawings

Commenting Organization: U.S. EPA Commentor: Saric
Section #: Sheet No. G-12 Page #: NA Line #: NA
Original Specific Comment #: 9

Comment: Section D/G-12 on this sheet shows anti-seep collars and cut-off trenches. However, it is not clear what these items are and what purpose they may serve. Additional details should be shown to clarify the section.

Response: The objective of anti-seep collars and cut-off trenches is to minimize seepage along the length of the pipe. The anti-seep collars and cut-off trenches achieve this objective by lengthening the flow path along the length of the pipe thus decreasing the hydraulic gradient, defined as head differential divided by flow length. When the hydraulic gradient is decreased, seepage along the length of the pipe is minimized.

Action: A detail of the anti-seep collar and cut-off trench will be added to the Final Design Package for clarity.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: Sheet No. G-17 Page #: NA Line #: NA
Original Specific Comment #: 10

Comment: A circled area is indicated as "Liner system at perimeter berm and impacted run-off catchment area," with a detail number 18/G-22. The circled area is not an impacted area; the reference and the detail number should be removed.

Response: The area shown as the "Liner system at perimeter berm and impacted run-off catchment area" will be used to contain impacted runoff in an active cell. The impacted runoff in this area will be allowed to percolate into the underlying leachate collection system. The functioning of this area is described more fully in Section 6.9 of the Prefinal Impacted Material Placement Plan. The

characterization of the circled area as an impacted runoff catchment area is accurate.

Action: No action is required.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: Sheet No. G-22 Page #: NA Line #: NA
Original Specific Comment #: 11

Comment: The detail number 18/G-17 shown on this sheet is not correct. The sheet should be revised to indicate that the correct number is 18/G-28.

Response: The reference shown for detail number 18/G-17 is incorrect and should be 18/G-28.

Action: The correct reference for detail 18 is 18/G-28 and will be corrected in the Final Design Package.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: Sheet No. S-1 Page #: NA Line #: NA
Original Specific Comment #: 12

Comment: Section B/S-1 refers to Note 6 for floor support and Note 9 for manhole embedment fill. However, the notes are not referenced correctly. The sheet should be reviewed and revised to indicate correct references. Note 13 is referenced with the section; however, it should be removed because it does not exist on this sheet.

This sheet includes a sectional plan designated as 112/S-1; the reference is not correct and should be designated as 112/M-4.

Section A/S-1 incorrectly shows concrete reinforcing as "#4 @ 12 OC" each way. It should be shown as "#4 @ 18 OC" each way, as is used for similar reinforcing specifications.

Response: Note 6 and Note 9 for the floor support and manhole embedment fill, respectively, referenced on Section B/S-1 are incorrect. These references should read Note 7 and Note 3, respectively. Note 13 on Section B/S-1 is not required.

The reference shown for detail number 112/S-1 is incorrect and should be 112/M-4.

Section A/S-1 incorrectly shows steel reinforcing in the manhole cover slab on the left portion as "#4 @ 12" O.C." The correct reinforcing steel specification for this portion of the manhole cover slab should be "#4 @ 18" O.C."

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Action: The correct references as noted above will be implemented in the Final Design Package.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: Sheet Nos. S-1 and S-2 Page #: NA Line #: NA
Original Specific Comment #: 13

Comment: These sheets show plans for leachate collection system (LCS) and leachate detection system (LDS) manholes, as well as the permanent lift station. Electric service panels are also shown on these plans; however, no dimensions or details are presented. It is not clear how the panels are to be constructed or how they are connected or attached to the concrete slab. Proper details of the panels should be presented on these sheets or reference to appropriate drawings should be made.

Response: The Specification Package (Section 16100, Part 3.06 "Equipment Supports") will be revised to instruct the Subcontractor to install the equipment supports according to the manufacturer's recommendations and to attach them to the concrete surface with expansion anchors. Notes will be added to Drawings S-1 and S-2 to direct the Subcontractor to Section 16100 of the Specification Package.

Action: As per response.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: Sheet No. S-3 Page #: NA Line #: NA
Original Specific Comment #: 14

Comment: Section A/S-3 presents the detail of the cover slab and reinforcing, which consists of #6 and 18" OC each way in a single layer at the mid-depth of slab. Because the concrete slab is thick (ranging from 6 inches to 1 foot), one layer of reinforcing is not adequate according to the American Concrete Institute (ACI) code. Design of this cover slab should be revised as necessary.

Response: The detail will be revised to require two layers of #4 bars at 12 in. OC each way.

Action: As per response.

Groundwater Detection Monitoring Program

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 4.3.2.1 Page #: 4-7 Line #: 25-29
Original Specific Comment #: 15

Comment: The text states that leachate samples will be collected from the leachate collection system every month during the first year and then quarterly thereafter

until closure. However, 40 CFR 264.303 requires that the liquid level in the leachate collection system be recorded weekly. DOE should state that it will comply with the inspection schedule required, in addition to analyzing leachate samples according to the proposed schedule.

Response: During the active life through installation of the final cover 40 CFR §264.303(c)(1) requires that the amount of liquids removed from each leak detection system sump be recorded weekly. After installation of the final cover, 40 CFR §264.303(c)(2) requires that the amount of liquids removed from each leak detection system sump be recorded at least monthly, but allows a tiered reduction in frequency. DOE intended to address these requirements in the OSDF Post-Closure Care and Inspection Plan (and indeed included them therein in Section 6.8), and once the requirements had been agreed to there, then to copy them to either this Plan or the OSDF Systems Plan. However, in accordance with this comment, the text in Section 4.0 of the Plan will be modified accordingly to address these requirements.

Action: As per response.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 4.3.2.1 Page #: 4-7 Line #: 31-34
Original Specific Comment #: 16

Comment: The text states that the leak detection system will be monitored monthly for the first year and that samples will be analyzed when enough liquid is present. However, 40 CFR 264.303 requires that the liquid level in the leak detection system be recorded weekly for the active life of the landfill. In addition, 40 CFR 264.304 requires analysis of leachate at specific times that may be more frequent than monthly. Furthermore, 40 CFR 264.304 requires the analysis of more than target parameters. DOE should revise the plan to comply with this regulation.

Response: Regarding frequency of recording for the amount of liquids removed from each leak detection system sump, see the response to Original Specific Comment 15.

Regarding response actions and associated sampling and analysis required under 40 CFR 264.304, the text in Section 6.8 of the OSDF Post-Closure Care and Inspection Plan (Revision F) addressed those requirements. In order to eliminate the possibility of discongruence between the same needs being addressed in two different plans, DOE intends to present the response actions requirements only in the OSDF Ground Water Monitoring Plan, and will revise the text of this plan accordingly.

Action: As per response.

Commenting Organization: U.S. EPA
Commentor: Saric
Section #: 4.4.1
Page #: 4-8
Line #: 12
Original Specific Comment #: 17

Comment: The text states that the trend analysis baseline of the volume of leachate will be used to begin a qualitative trend analysis for the volume of leachate. Both 40 CFR 264.301 and 264.304 require that a quantitative assessment be made in determining the rate of leachate generation and accumulation in the leak detection system. DOE should also incorporate this quantitative analysis into its Correlation of Monitoring Data section. 40 CFR 264.97(h) also requires that the owner or operator conduct a quantitative statistical analysis and not a qualitative analysis. DOE should present a statistical analysis that complies with 40 CFR 264.97(h). DOE should also incorporate this quantitative analysis into the section on Correlation of Monitoring Data.

Response: (1) Quantitation of leachate generation and accumulation quantities per 40 CFR 264.301 and 264.304 - See response to Original Specific Comment 15.

(2) Quantitative statistical analysis per 40 CFR 264.97(h) - OAC 3745-27-10(C), determined as an ARAR in both the OU2 ROD and the OU5 ROD, at Paragraph (6), indicates that after completing collection of background data, the owner or operator of the landfill facility shall specify which statistical method(s) will be used in evaluating groundwater quality; the paragraph also identifies five (5) statistical methods which may be considered:(I) a parametric analysis of variance; or (ii) an analysis of variance based on ranks; or (iii) a tolerance or prediction interval; or (iv) a control chart approach; or (v) another statistical method. Paragraph (7) of the same OAC rule identifies the performance standards for the statistical methods. DOE intends to identify in the future, after baseline is established, which statistical method (on a parameter by parameter basis) will be used to evaluate groundwater quality. The text will be revised to reflect this.

(3) Incorporation of these into the correlation for monitoring data. The text will be revised to include these into the discussion in the Correlation of Monitoring Data section.

Action: As per response to each issue.

Commenting Organization: U.S. EPA
Commentor: Saric
Section #: 4.5
Page #: 4-8
Line #: 41
Original Specific Comment #: 18

Comment: The text presents a response approach if both the cap, and the primary liner have failed. The approach described does not comply with 40 CFR 304, which requires a specific response action plan, specifies when the response action plan is to be implemented, specifies reporting requirements and requires more complete analysis than proposed by DOE in this section. DOE should revise this section to comply with 40 CFR 264.304. The response plan also does not

comply with the requirements of 40 CFR 264.98. DOE should fully discuss the response actions to be taken if the groundwater monitoring wells indicate a potential release.

Response: See the response to the second part of Original Specific Comment # 16.

Action: No action is required.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 4.6 Page #: 4-9 Line #: 16
Original Specific Comment #: 19

Comment: The text state that DOE will submit groundwater monitoring and leachate and leak detection reports to U.S. EPA on an annual basis. DOE should submit groundwater monitoring and leachate collection and leak detection reports to U.S. EPA on a quarterly basis, and include a trend analysis report in the integrated monitoring report (IEMP), which is issued annually.

Response: Available information will be submitted quarterly, in accordance with the reporting schedule proposed in the Integrated Environmental Monitoring Plan. The text will be revised to reflect this.

Action: As per response.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 5.5 Page #: 5-9 Line #: NA
Original Specific Comment #: 20

Comment: Table 5-5 lists the background values for the five indicator parameters. The list should also include technetium-99. DOE should also describe how these background values were derived and should indicate their specific relationship to the on-site disposal facility. Background values for the target analytes should be developed from locations immediately upgradient of the disposal unit. In addition, proposed background values for total organic halogens are extremely high for uncontaminated groundwater, indicating organic contamination. DOE should discuss why the values are so high. Specific guidance for perched groundwater should also be included in the table.

Response: DOE agrees that the values presented for total organic halogens are high. The commentor seems to be under the impression that the OSDF area overlies uncontaminated groundwater; however, the OSDF area overlies an area of the site which will be undergoing groundwater remediation, as is discussed in numerous places in this plan. Hence, actual baseline values, not background values, will be used. Please see the text currently in Section 4.2.4 of the plan for further discussion of the monitoring well network, timing of installation of

these wells, and establishment of baseline GMA groundwater quality in the OSDF area.

Action: No action required.

Borrow Area Management and Restoration Plan

Commenting Organization: U.S. EPA
Commentor: Saric
Section #: 1.5
Page #: 1-2
Line #: 26 and 27
Original Specific Comment #: 21

Comment: The text states that the Prefinal Design Package (PDP) "provides project drawings that shall specifications be met during construction and...." The text lacks clarity and should be revised.

Response: The text will be revised to state, "...provides project drawings and specifications that shall be followed during construction; and..."

Action: As per response.

Commenting Organization: U.S. EPA
Commentor: Saric
Section #: 4.3
Page #: 4-1
Line #: 28 and 29
Original Specific Comment #: 22

Comment: DOE has indicated that detailed material requirements for haul roads are presented in Section 02230 of the specifications and, where appropriate, the BAMR Plan has referenced the contract specifications. The revised text does not include a reference to the contract specifications. The text should be revised to specify where the contract specifications for haul roads can be found.

Response: The referenced section of the BAMR Plan specifically covers haul roads within the borrow area. The intent is to allow the Subcontractor to establish roads which are suitable to the temporary nature of activities within the borrow area. Haul roads connecting the borrow area to the OSDF cell construction area are specifically called out on the Drawings and in the Technical Specifications.

Action: No action is required.

Commenting Organization: U.S. EPA
Commentor: Saric
Section #: 5.1
Page #: 5-1
Line #: 5 to 10
Original Specific Comment #: 23

Comment: The text refers to two major developmental stages for the borrow area. The text should be revised to include a figure depicting the areas, swales, topography, and surface water flow during the specific construction stages.

Response: A figure depicting the areas of development will be added to the BAMR Plan.

Action: As per response.

Surface Water Management And Erosion Control Plan (SWMEC)

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 1.1 Page #: 1-1 Line #: NA
Original Specific Comment #: 24

Comment: Some inconsistencies in Section 1.1 conflict with discussions in Section 2.2, Page 2-2. The second paragraph of Page 1-1 states that "the SWMEC plan addresses surface water management and erosion control practices throughout the construction, impacted material placement, and closure of the OSDF." The SWMEC plan does not address surface water management and erosion control practices during or beyond the 30-year postclosure period prescribed in the final Record of Decision (ROD) for remedial actions at OU 2. Those activities are to be addressed in a plan to be developed later." However, Page 2-2 identifies ARARs that should be addressed by the subcontractor. ARAR No. 6 refers to regulation No. OAC 3745-27-14(A)(1),(2) and states that following completion of final closure activities, postclosure care activities shall be conducted at the sanitary landfill facility for a minimum of 30 years. Postclosure care activities shall include but are not limited to the following.

- Continuing operation and maintenance of the surface water management system.
- Maintaining the integrity and effectiveness of the cap system, including making repairs to the cap system as necessary to correct the effects of erosion and prevent runon and runoff from eroding or otherwise damaging the cap system.

The statement that the SWMEC plan does not address practices during or beyond the 30-year postclosure period, and that such practices will be addressed in a plan developed later, is not specific enough to address this issue. A more specific timeframe should be discussed and implemented for the final design SWMEC plan.

Response: ARAR No. 6 on page 2-2 of the SWMEC plan will be deleted. Surface-water management and erosion control issues during the 30-year post-closure period have been addressed in the Post-Closure Care and Inspection Plan.

Action: As per response.

Commenting Organization: U.S. EPA
Commentor: Saric
Section #: 5.0
Page #: 5.1
Line #: NA
Original Specific Comment #: 25

Comment: Subsection 5.6 of the IDP was titled "BERMS." This subsection was removed from the PDP. The berms are needed to divert runoff away from the OSDF and to contain flood waters in the channel. The text should be revised to clarify why the berm subsection was removed.

Response: The SWMEC Plan text was revised to reflect the terms used in the document "*Rainwater and Land Development*", Ohio's Standard for Stormwater Management Land Development and Urban Stream Protection, Second Edition, 1996. In this document, "berms" are not addressed; however, other control features that are used to divert stormwater runon/runoff (i.e., temporary diversions) are addressed in the SWMEC Plan. Berms designed as part of the permanent OSDF storm-water management system are shown in detail on the Drawings.

Action: No action is required.

Commenting Organization: U.S. EPA
Commentor: Saric
Section #: 5.5.1
Page #: 5.4
Line #: NA
Original Specific Comment #: 26

Comment: This section discusses the use and application of check dams. A reference is made to a detail illustrating a constructed check dam that is provided on page 133 of the 1996 Ohio Department of Natural Resources (ODNR) "Rainwater and Land Development;" the text also indicates that the subcontractor shall install the check dam in accordance with ODNR. This detail should be incorporated into the Final Design Package.

Response: Check dams are intended to be a part of the temporary erosion control system to be installed by the Subcontractor on an as-needed basis. Permanent ditches are designed with riprap for erosion protection.

Action: No action is required.

Commenting Organization: U.S. EPA
Commentor: Saric
Section #: 6.0
Page #: 6-1
Line #: NA
Original Specific Comment #: 27

Comment: Subsection 6.2 of the IDP was titled "STRAW BALE BARRIERS." This subsection was removed from the PDP. The straw bales are an important erosion control feature and are needed to intercept sediment, to decrease the velocity of sheet flow, and to reduce sedimentation around drainage inlets and catch basins. The text should be revised to explain why the subsection was removed.

Response: The text was revised to reflect the terms used in the document "*Rainwater and Land Development*", Ohio's Standard for Stormwater Management Land Development and Urban Stream Protection, Second Edition, 1996. In this document, "straw bales" are not addressed. Therefore, reference to straw bales was deleted from the SWMEC Plan. This does not prevent a contractor from using straw bales as needed. According to the Ohio standards, a combination of sediment basins or traps, silt fence, and check dams should be used to control flow velocity and trap sediment.

Action: No action is required.

Post-Closure Care and Inspection Plan

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 3.1 Page #: 3-1 Line #: 36
Original Specific Comment #: 28

Comment: The text in this section discusses site history and the volume of impacted material destined for disposal in the OSDF. The text states that an estimated 2.5 million cubic yards (1.9 cubic meters) of bank/unbulked, impacted material will be disposed of in the OSDF. The volume of 1.9 cubic meters is incorrect. The text should be revised to reflect the correct volume of material of 1.9 million cubic meters.

Response: The identified typographic error has been corrected.

Action: The text has been corrected to read "estimated 2.5 million cubic yards (1.9 million cubic meters)".

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 6.4 Page #: 6-6 Line #: 26
Original Specific Comment #: 29

Comment: The text in this section presents an overview of the leachate management system. The text states that "the locations of the LCS, LDS, and LTS (leachate transmission system) pipes, manholes, and gravity lines are shown in the as-built construction drawings. The text should be revised to state that the pipes, manholes, and gravity lines "will be" instead of "are" shown in the as-built construction drawings.

Response: The identified tense error has been corrected.

Action: As per response.

Commenting Organization: U.S. EPA
Commentor: Saric
Section #: 6-1
Page #: 6-7
Line #: NA
Original Specific Comment #: 30

Comment: In Table 6-1, Note 2, the text states that the leachate collection and leak detection system shall be inspected after the occurrence of major earthquakes. U.S. EPA precommends that an inspection be completed after each earthquake in the OSDF area. The text should be revised accordingly.

Response: Section 11.3 has been revised to indicate that DOE will be requesting reporting of unusual occurrences in the area of the FEMP OSDF that may affect subsurface stability by the sheriff's department from both Butler and Hamilton County, and that a Contingency Inspection (see Section 8.3) may be triggered by such a report.

Footnotes to these tables have been revised to reference Section 11.3 Such notification will be the primary trigger for an inspection of the OSDF system components as indicated below:

OSDF System Component	Governing Table
Leachate Collection System (LCS) & Leak Detection System (LDS)	Tables 6-1 and 6-2
site security system	Table 9-2
drainage system	Table 9-4

Action: As per response.

Systems Plan

Commenting Organization: U.S. EPA
Commentor: Saric
Section #: 1.3
Page #: 1-4
Line #: 4
Original Specific Comment #: 31

Comment: U.S. EPA's original specific comment #60 on the IDP requests that DOE provide additional information regarding maintenance of the leachate management system (LMS). DOE's response is that the LMS will be maintained; however, no indication is made regarding who be responsible for LMS maintenance. The text should be revised to clarify who will be responsible for maintenance of the LMS.

Response: DOE reiterates it's previous response which is: " The leachate management system will be maintained in good working order. The only question is who will maintain this system. It is a contractual matter and DOE would prefer to leave the second bullet as it currently is written. At this time discussions are underway to determine which bargaining unit will perform this function. Action: No action is required."

Action: No action is required at this time. DOE will keep EPA posted on the status of resolving this issue.

Attachment 2

Responses to OEPA Comments

RESPONSE TO OEPA TECHNICAL REVIEW COMMENTS ON THE PREFINAL DESIGN PACKAGE FOR THE ON-SITE DISPOSAL FACILITY

SUPPORT PLANS
Permitting Plan and Substantive Requirements

1) Commenting Organization: Ohio EPA Commentor: DSW
Section #: Appendix A Pg #: A-8 Line #: OAC 3745-66-19(A) Code:
Original Comment #:

Comment: The first line contains a typographical error, "rot he" should read "to the".

Response: Agreed. The typographical error will be corrected and the entire document will be reviewed for other such errors.

Action: The text on Page A-8 will be revised to read, "...to the local zoning authority, or the authority with jurisdiction..."

2) Commenting Organization: Ohio EPA Commentor: DSW
Section #: Appendix A Pg #: A-15 Line #: OAC 3745-27-06(B)(6) Code:
Original Comment #:

Comment: The bullet "Direction of flow and points of concentration of all surface waters on the site..." refers to drawings that do not contain the information listed. Most of this information appears to be left up to the subcontractor to provide (e.g. Section 02270, Erosion and Sediment Control). However this information should be provided with the drawings.

Response: Although the subcontractor does have the responsibility to provide much of the information on stormwater and sediment control, it must be within the criteria established by the OSDF drawings and specifications. Additional detail, such as arrows to indicate the flow of surface water and the location of concentration points, will be added to Drawing G-2 and will be part of the criteria the subcontractor must consider.

Action: As stated in response.

3) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Appendix A Pg #: A-22 Line #: Code:
Original Comment #:

Comment: The citation to OAC 3745-27-06(C)(3) and the requirement to control and manage groundwater infiltration is listed as "not applicable". The reason for this is not clear considering that the OSDF is planned to be constructed in a location with areas of known perched water and that over-digging water-bearing sand seams is a design consideration.

Response: To determine the rate of perched water infiltration in the footprint of the OSDF, three test pits were excavated to a depth of nine feet during the field activities for the Addendum to the Predesign and Site Selection Report. Minimal amounts

of infiltration were observed during the tests. For this reason, DOE does not anticipate that groundwater infiltration will pose a problem during construction. DOE plans on overdigging sand seams according to Specification 2200, Earthwork, in order to further protect the Great Miami Aquifer, not because the water will pose a threat to the integrity of the liner.

Action: No action is required.

4) Commenting Organization: Ohio EPA Commentor: DSW
Section #: Appendix A Pg #: A-28 Line #: OAC 3745-27-06(C)(10) Code:
Original Comment #:

Comment: The cross-references listed for the bullet "jeopardize the continued existence of endangered or threatened species..." should include Appendix D of the Remedial Action Work Plan for the Soil Remediation Project Area 1, Phase I, July 1996.

Response: The reference to the Soil Remediation Project Area 1, Phase I Remedial Action Work Plan will be added.

Action: As stated in response.

5) Commenting Organization: Ohio EPA Commentor: DSW
Section #: Appendix A Pg #: A-23 Line #: OAC 3745-27-06(C)(3) Code:
Original Comment #:

Comment: The remarks under the bullet "Fires, dust, scavenging, vectors, erosion, blowing litter, and birds" states that these requirements are not applicable to the operation of the OSDF when measures and operations to manage and control erosion are applicable to the OSDF. Ohio EPA suggests adding a notation that except for erosion control these requirements are not OSDF90.CMM applicable. This is mentioned on Pages B-10 and B-26 of Appendix B and elsewhere.

Response: The text will be revised to indicate that erosion control is applicable to the OSDF.

Action: The text will be changed to, "Except for erosion, these requirements are not applicable to the operation of the OSDF." The following text will be added to the "Cross-Reference" column, "Section 2.8.1 through 2.8.4 of OSDF DCP, Sections 12.0 and 13.0 of OSDF Calculation Package, and OSDF Surface Water Management and Control Plan."

Borrow Area Management and Restoration Plan

Ohio EPA has no comments on the BAMR Plan.

Surface Water Management and Erosion Control Plan

6) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 2.4 Pg #: 2-3 Line #: 9 Code:
Original Comment #:

Comment: "OAC 3745-27-08(C)(6)(d)" should read "OAC 3745-27-08(C)(6)(b)".

Response: DOE respectfully disagrees. The comment requests changing the citation in the third bullet on the page from OAC 3745-27-08(C)(6)(d) to (C)(6)(b). Paragraph (C)(6)(b) of OAC rule OAC 3745-27-08 is already cited in the first bullet on the page, as appropriate for reference to the peak flow condition identified. Paragraph (C)(6)(d) is cited in the third bullet to provide appropriate reference to the requirements for sedimentation ponds.

Action: No action is required.

7) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 2.5 Pg #: 2-3 Line #: 36 Code:
Original Comment #:

Comment: "ODNC" should read "ODNR".

Response: Agreed.

Action: The identified typographical error will be corrected -- "ODNCR".

8) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 6.3.3 Pg #: 6-3 Line #: 17 Code:
Original Comment #:

Comment: "basing" should read "basin".

Response: Agreed.

Action: The identified typographical error will be corrected -- "basing".

9) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 6.3.4 Pg #: 6-3 Line #: 27 Code:
Original Comment #:

Comment: "on-half" should read "one-half".

Response: Agreed.

Action: The identified typographical error will be corrected -- "one-half".

10) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 6.4.1 Pg #: 6-3 Line #: 43 Code:
Original Comment #:

Comment: "A biotic barrier" should read "A barrier". A biotic barrier is a barrier made from or caused by living things rather than one to living things.

Response: DOE respectfully disagrees. The term "biotic barrier" is a term common to the radioactive waste field and the radioactive waste regulations (U.S. EPA, U.S. Nuclear Regulatory Commission, and DOE Orders), and has been used extensively in previous FEMP documents for evaluation of alternatives and selection of remedy.

Action: No action is required.

11) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 6.4.1 Pg #: 6-4 Line #: 1-3 Code:
Original Comment #:

Comment: "the biotic barrier" should read "the biointrusion barrier". See comment #6.

Response: DOE agrees that the language here can be confusing. For clarity, the text will be revised to provide specific reference to the biointrusion layer.

Action: The "biotic barrier" and "biotic layer" phrases used in this bullet will be replaced with "biointrusion layer" for specific reference to that layer, as that is the moniker for that layer as used in the preceding bullet.

Cultural Resources Unexpected Discovery Plan

12) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: OSDF support plans, 4 Pg #: 3 Line #: 16-19 Code: C
Original Comment #:

Comment: Are there any contingency plans in place to ensure that any work stoppages which may be incurred due to the unearthing of Native American remains or funerary objects will not effect the overall construction of the OSDF or the remediation of the FEMP site?

Response: Although the "Unexpected Discovery of Cultural Resources, Rev. 1" procedure was developed to ensure the safe handling of newly discovered cultural resources during remediation. Multiple agreements on the subject of the plan that manages the subject are being finalized between the Advisory Council on Historic Preservation, the Ohio Historic Preservation Office, and the likely affiliated Native American Tribes to address mandated delays (under the National Historic Preservation Act, Archeological Resources Protection Act, Native Graves Protection and Repatriation Act, and the American Religious Freedom Act) that the FEMP remedial effort may incur as a result of an unexpected find. The

agreements will allow FEMP remedial activities to resume immediately following the complete removal of the items instead of waiting the required number of days normally mandated.

Action: No action is required.

Construction Quality Assurance Plan

General Comments

13) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: Pg. #: Line #: Code: M
Original Comment #

Comment: In general, there are many discrepancies between the OSDF Specification Package and the CQAP. Most of these discrepancies are included as comments. However, it would be advisable to perform a thorough comparison of these two documents. As stated in the overview, the CQAP "assures that OSDF components are constructed in compliance with the approved project plans and specifications."

Response: The CQA Plan in the FDP will be checked for consistency with the project specifications and revised where appropriate.

Action: As per response.

Specific Comments

14) Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc
Section #: 2.2.1.1 Pg #: 2-2 Line #: Code:
Original Comment #:

Comment: The liner specifications call for meeting requirements of OAC 3745-27-08(C)(1)(c), including soil particle size distributions. This section should be revised to reflect the test pad qualification program and the substitution of performance criteria for the particle size requirements.

Response: The intent of the referenced section is to state the ARARs. The final compacted clay liner criteria will be given in the specification Section 02225 and will be based on both ARARs and the results of the Test Pad Program.

Action: No action is required.

15) Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc
Section #: 2.2.4.7 Pg #: 2-11 Line #: 3rd bullet Code:
Original Comment #:

Comment: The cap raises the same particle size distribution issues as the liner, since the same section of the Ohio Administrative Code specifies them both. This section should be revised to reflect the test pad qualification program and the substitution of performance criteria for the particle size requirements.

Response: See response to Comment No. 14 above.

Action: No action is required.

16) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 4.0 Pg. #:4.2 Line #: Code: C
Original Comment #

Comment: On figures 4-1 and 4-2, add a reference for input from the regulatory agencies. Additional locations where approval by the permitting agency is required are necessary throughout the text.

Response: The intent of Figure 4-1 is to illustrate the OSDF construction organization. The intent of Figure 4-2 is to illustrate the OSDF CQA organization. While the regulatory agencies are major team players, they do not fill a box at the level of the organizations illustrated. It is unclear where in the text of the CQA Plan that any required approval by the permitting agency is required. The final certification report of cell construction will be submitted to the regulatory agencies for approval prior initiation of impacted material emplacement.

Action: No action is required.

17) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 4.4.2 Pg. #:4-7 Line #:14 Code: C
Original Comment #

Comment: Please add a bullet to the CQC Consultants requirement list describing the requirements of the CQC Consultants laboratory. The qualifications should be the same as outlined on Page 4-14, Line 15-28.

Response: The CQC laboratory facilities must meet all required qualifications, as given in Sections 4.5 and 4.6. Section 4.4 is intended to prescribe qualifications for the CQC Consultant.

Action: Qualification requirements identical to Section 4.5 for the on-site soils laboratory will be added to Section 4.4.2 of the CQA Plan in the FDP.

18) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 5.1.1 Pg. #:5-2 Line #: Code: C
Original Comment #

Comment: Please add a bullet for the equipment and personnel being worked in each unit process, including subcontractors, as outlined in EPA/600/R-93/182.

Response: The general documentation of subcontractor personnel and equipment is more appropriately done by the Construction Manager. The CQC Consultant will document activities directly related to quality control testing which will include subcontractor personnel and equipment as appropriate.

Action: No action is required.

19) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 6.2 Soil Components Pg. #: 6-1 Line #: 18-20 Code: C
Original Comment #

Comment: The granular material for the leachate drainage corridor, which was specified at a 10 cm/sec hydraulic conductivity, has been omitted from this and further sections of this document.

Response: The drainage corridors in the LCS and LDS layers will be referenced in Section 6.2 of the CQA Plan for the FDP.

Action: As per response.

20) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 6.5 Pg. #:6-3 Line #: 26 Code: C
Original Comment #

Comment: The text states that, "The CQC Consultant shall monitor proof rolling of areas that are cut to achieve grade." The method and frequency of monitoring the surface treatment is needed. Measurement methods may include penetrometer, visual classification, and compaction. The replacement of soil that does not meet the classification should be defined in the specifications.

Response: The CQC Consultant will monitor proofrolling of subgrade in cut sections. Visual observation is the method for monitoring. The frequency of monitoring is whenever proofrolling is being accomplished. Specification Section 02200 defines measurements and requirements for replacement of unsuitable soils.

Action: No action is required.

21) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 6.5 Earthwork Pg. #: 6-3 Line #: 33 Code: E
Original Comment #

Comment: The word "results" has been misspelled.

Response: The CQA Plan will be corrected in the FDP.

Action: As per response.

22) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 6.6 Conformance Testing Pg. #: 6-5 Line #: 3-6 Code: C
Original Comment #

Comment: The document states "When necessary, the visual-manual procedure for the description and identification of soils shall be conducted by the CQC Consultant with test method ASTM D 2488." The document needs to define clearly what "when necessary" means and how it will be determined.

Response: The wording of the CQA Plan will be revised in the FDP to state, "...when necessary to establish conformance with the project specifications referenced in Section 6.4."

Action: As per response.

23) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 6.6.1 Pg. #:6-5 Line #: 16 Code: C
Original Comment #

Comment: The text states that standard proctor shall be used for the determination of moisture density relationships. The standard proctor analysis should include modified and reduced proctor for every change of material encountered. In addition, testfill results are needed to ensure hydraulic conductivity of the compacted material is less than $1x10^{-7}$ cm/s.

Response: The standard and modified Proctor analysis was performed during the pre-design investigation and test pad program considering the entire range of soils expected in the construction of OSDF for determination of the moisture-density relationship and hydraulic conductivity of the compacted soils. The entire range of soils expected from the OSDF excavation area and borrow area were considered in the test pad program conducted. Based on the test pad program, there is no need for modified or reduced Proctor analysis.

Action: No action is required.

24) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 6.7 Pg. #:6-6 Line #: 6-23 Code: C
Original Comment #

Comment: Lines 6-23 list the monitoring requirements of the earthwork activities. The criteria for each of these issues has not been defined. For example, please define what maximum clod size will be accepted or the thickness of lifts.

Response: The intent of the CQA Plan is to describe quality assurance activities. Specification of material properties is left to the project specification.

Action: No action is required.

25) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 6.9.2 Test Frequency Pg. #: 6-7 Line #: 27-28 Code: C
Original Comment #

Comment: Who is responsible for observing and documenting the "variability of the materials."

Response: The CQC Consultant is responsible.

Action: The referenced section will be revised in the FDP to state, "...if variability of materials is observed by the CQC Consultant."

26) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 6.12.2 Pg. #:6-10 Line #: 24 Code: C
Original Comment #

Comment: The text states that area's that fail shall be reworked to the satisfaction of the Construction Manager. These areas should be reworked to the requirements of the specifications.

Response: The CM is the only person who can direct the OSDF subcontractor. As such, that individual has the responsibility and authority to enforce compliance with the specifications.

Action: No action is required.

27) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: Table 6-1 Pg. #: 6-12 Line #: 7-12 Code: C
Original Comment #

Comment: The column for compacted fill testing frequencies on Table 6-1 indicates testing for Particle Size Analysis, Atterberg Limits, and Moisture Content will be conducted. However, no acceptable values for these parameters are given in this document or in Specification 02200 in the OSDF Prefinal Specifications Package. A table indicating acceptable values should be included.

Response: Specification Section 02200 requires that compacted fill have a maximum size of 3 in. and classify as either GC, SC, SM, ML, CL or CH by the USCS. Therefore, particle size and Atterberg limits must be in the ranges to meet the classification of the soil. Moisture content is specified in Section 02200 to be with ± 3 percent of optimum moisture content which depends on the soil type.

Action: No action is required.

28) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: Table 6-1 Pg. #: 6-12 Line #: 7-12 Code: C
Original Comment #

Comment: The column for compacted clay liner testing frequencies on Table 6-1 indicates testing for Atterberg Limits and Moisture Content will be conducted. However, no acceptable values for these parameters are given in this document or in Specification 02225 in the OSDF Prefinal Specifications Package. A table indicating acceptable values should be included.

Response: Specification Section 02225 requires that compacted clay cap and liner be classified as CL or CH, which defines the range of Atterberg limits, and a Plasticity Index (PI) between 10 and 40. The range of acceptable moisture content will be established based on the Test Pad Program.

Action: No action is required.

29) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: Table 6-1 Pg. #: 6-12 Line #: 7 Code: C
Original Comment #

Comment: Test method for Particle Size Analysis for the LDS Drainage Layer and LCS Drainage Layer is given as ASTM D 422. In Specification 02710 in the OSDF Prefinal Specifications Package, test method ASTM C 136 is specified for the sieve analysis of the LDS Drainage Layer and LCS Drainage Layer. This discrepancy should be corrected.

Response: Table 6-1 will be corrected to require particle size analysis of the LDS and LCS layers in accordance with ASTM C 136.

Action: As per response.

30) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: Table 6-2 Pg. #: 6-13 Line #: 11-12 Code: C
Original Comment #

Comment: The column for compacted clay cap testing frequencies on Table 6-2 indicates testing for Moisture Content will be conducted. However, no acceptable range of values for moisture content is given in this document or in Specification 02225 in the OSDF Prefinal Specifications Package. A table indicating acceptable values should be included.

000034

Response: See response for comment 28 above.

Action: No action is required.

31) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: Table 6-2 Pg. #: 6-13 Line #: 7 Code: C
Original Comment #

Comment: Test method for Particle Size Analysis for the Cover Drainage Layer is given as ASTM D 422. In Specification 02710 in the OSDF Prefinal Specifications Package, test method ASTM C 136 is specified for the sieve analysis of the Cover Drainage Layer. This discrepancy should be corrected.

Response: The CQA Plan in the FDP will be corrected to require particle size analysis in accordance with ASTM C-136 as stated in Section 02710 of the specifications.

Action: As per response.

32) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: Table 6-2 Pg. #: 6-13 Line #: 5-20 Code: C
Original Comment #

Comment: The primary biointrusion barrier has a gradation requirements given in Specification 02280 in the OSDF Prefinal Specifications Package. No conformance testing is required according to Table 6-2. This discrepancy should be corrected.

Response: Conformance testing of the biointrusion layer stone gradation requirements is not considered necessary. The specification Section 02280 requires access to the supplier's source plant to verify gradation methods.

Action: No action is required.

33) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: Table 6-2 Pg. #: 6-13 Line #: 7-8 Code: C
Original Comment #

Comment: The column for compacted vegetative soil layer testing frequencies on Table 6-2 indicates Particle Size Analysis will be conducted. However, no acceptable range of values for gradation are given in this document or in Specification 02250 in the OSDF Prefinal Specifications Package. A table indicating acceptable values should be included.

Response: The Specification Section 02250 requires a maximum particle size of 3 in. and a classification of CL, SC, or GC per the USCS. These requirements determine the range of acceptable particle size values.

Action: No action is required.

34) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: Table 6-2 Pg. #: 6-13 Line #: 13 Code: C
Original Comment #

Comment: The topsoil has Soil Classification requirements given in Specification 02920 in the OSDF Prefinal Specifications Package. No conformance testing for soil type is required according to Table 6-2. This discrepancy should be corrected.

Response: Table 6-2 will be revised in the FDP to add the requirement to conduct soil classification testing per ASTM D 2487 at a frequency of once per 5,000 yd^3.

Action: As per response.

35) Commenting Organization: Ohio EPA Commentor: DERR
Section #: 7.5.4 Pg #: Line #: Code: c
Original Comment #:

Comment: Section 7.5.4, FML Conformance Test Failure, also Sections 8.4.4, GCL's and 9.4.4, Geotextiles. These sections are unclear. Specifically, if a roll fails while the rolls produced immediately before and after the failing roll both pass, are the two passing rolls still acceptable? Part of the problem with this paragraph is the sentence "All rolls which fail numerically between passing roll numbers shall be rejected...". Should that sentence read "which fall numerically"?

Response: The CQA Plan in the FDP will be revised to state, "which fall numerically..." as suggested.

Action: As per response.

36) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 7.6 Pg. #:7-5 Line #: 8-9 Code: C
Original Comment #

Comment: The text describing the acceptability of the subgrade surface lacks details. The subgrade surface at a minimum should be constructed to the required grade with no ruts greater than one inch. Further, the subgrade should conform and perform to all criteria outlined in Tables 6-1 through 6-4.

Response: The referenced section will be revised in the FDP to add the sentence, "At a minimum, the subgrade shall contain no loose stones and no ruts greater than 1 in. (2.5 cm) depth."

Action: As per response.

000036

37) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 7.7 Pg. #:7-5 Line #: 26-27 Code: C
Original Comment #

Comment: The in-situ testing of the backfill material for the anchorage trench will, at a minimum be at the same rate at outlined in Tables 6-1 through 6-4.

Response: The referenced section will be revised in the FDP to state, "...of the Construction Manager but at a minimum frequency of performance testing shown in Table 6-3 for compacted clay liner.

Action: As per response.

38) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 7.8.2 Pg. #:7-6 Line #: 33 Code: C
Original Comment #

Comment: The placement of a geomembrane during the inclement weather (ponded water, excessive winds, excessive moisture, or precipitation) will reduce the effectiveness of the geomembrane and in some cases, may result in catastrophic failure. The Construction Manager should not have the authority to permit placement under adverse weather conditions.

Response: The referenced section will be revised in the FDP to state, "...or above 104°F unless authorized by the Construction Manager. Geomembrane placement shall not proceed during any precipitation...". Also, the CM is the legal representative for this project. Please see response to Comment 26.

Action: As per response.

39) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 7.9.9.2 Pg. #:7-15 Line #: 20 Code: E
Original Comment #

Comment: Please correct the reference to read, "Section 7.9.8."

Response: The CQA Plan will be revised as suggested.

Action: As per response.

40) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 7.10.3 Pg. #:7-19 Line #: 15-16 Code: C
Original Comment #

Comment: Please add "or as specified in Table 7.2," to the sentence, "Large caps may be of ... Construction Manager."

Response: The CQA Plan will be revised as suggested.

Action: As per response.

41) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 7.12.1 Pg. #:7-20 Line #: 8-24 Code:
Original Comment #

Comment: Please add a bullet to describe how the maximum backfill particle size should be less than 0.5 inches.

Response: The design for the LDS and LCS layers requires that a geotextile cushion be installed on the geomembrane prior to placement of the LDS and LCS materials. These materials may contain particles larger than 0.5 in.

Action: No action is required.

42) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: Table 7-1 Pg. #:7-22 Line #: Code: C
Original Comment #

Comment: Please accurately describe how a lot of geomembrane will be determined.

Response: The note to Table 7-1 will be revised to add, "A lot will be as defined by ASTM 4354".

Action: As per response.

43) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: Table 7-1 Pg. #: 7-22 Line #: Code: C
Original Comment #

Comment: Several of the geomembrane properties required by Specification 2770 in the OSDF Prefinal Specifications Package are not included on Table 7-2. These properties include Melt Flow Index, Tear Resistance, Low Temperature Brittleness, Dimensional Stability, and Environmental Stress Crack. This discrepancy should be corrected.

Response: Conformance testing required in Table 7-1 of the CQA Plan is intended to assure the quality of geomembrane delivered to the project through select indicator properties. The referenced tests are considered adequate indicators for evaluating the geomembrane quality and consistency. Table 7-2 in the CQA Plan is for testing requirements. Table 02770-2 is the required HDPE seam properties.

Action: No action is required.

000038

44) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: Table 7-2 Pg. #:7-23 Line #: 35 Code: E
Original Comment #

Comment: The reference to Appendix A is incorrect.

Response: The referenced FTB descriptions are found on Pages A-9 and A-11 of NSF54.

Action: No action is required.

45) Commenting Organization: Ohio EPA Commentor: DERR
Section #: 9.7 Pg #: 9-5 Line #: 1st bullet Code:
Original Comment #:

Comment: Specify the minimum overlap required for patches on slopes.

Response: The CQA Plan will be revised in the FDP to state, "...and no closer than 1 in. from any edge) with a minimum 12-in. overlap".

Action: As per response.

46) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: App B Pg. #:02770-17 Line #: Code: C
Original Comment #

Comment: According to EPA Technical Guidance Document QA/QC for Waste Containment Facilities (Page 157), the shear strength of a HDPE seam should be approximately 95% of the specified minimum yield strength. On Page 02770-16, the minimum yield strength of 60 mil HDPE is 126 lb/in. On Page 02770-17, the minimum shear strength of the seam should be 108 lb/in. This value is approximately 85% of the shear strength of the HDPE, not 95% as suggested in the guidance. Please explain.

Response: The specifications for bonded shear strength will be made consistent with EPA and NSF guidance of 95 percent of the yield strength for both 60-mil and 80-mil HDPE.

Action: As per response.

Impacted Material Placement Plan

47) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 8.6 Pg #: Line #: Code: M
Original Comment #:

Comment: It is unacceptable to Ohio EPA to defer the decisions regarding the placement of Category 5 materials to either the OU3 ROD, the OU3 Implementation Plans or the OU3 Remedial Action Work Plan as stated in Section 8.6. It was Ohio EPAs

understanding that the Impacted Materials Placement Plan was to serve as a central location for all WACs both physical and chemical. It was also our understanding that decisions on the physical WAC would be made internal to OU2 and that these decisions would be made on the basis of design needs such as constructability and the need to avoid differential settlement. In the case of category 5 materials, these design needs are inconsistent with the needs of the OU3 managers to move these materials. The independent decision making by the WAC overseers was an important consideration in Ohio EPAs initial entertainment of the placement of Category 5 materials.

The Ohio EPA suggests that DOE re-write the IMPP sections that address the placement of oversize materials and other special handling materials. The following issues should be addressed:

- Avoidance of odors from putrescible wastes.
- A definitive list of over size objects from Operable Unit 3 should be assembled. This list should be used as a basis to decide the disposal method for each object.
- Crush all concrete larger than 18 inches in any dimension to ASTM soil specifications.
- Treat all pieces of structural steel to steel shards that can be used to attenuate uranium by maintaining a reducing electrochemical potential.
- The IMPP should be detailed enough so that a manager from another Operable Unit can make an accurate and consistent determination of the performance criteria. There are many instances where ambiguities and inconsistencies exist.
- The material classifications are misleading. For example, Category 2 materials "can be transported, placed and compacted *in masse*."(Quoted from Page 5-1). Yet on Page A.3-2 of Appendix A steel beams smaller than 18 inches in only one dimension can be classified as Category 2.

Response: OEPA has issued a number of concerns in this comment. First, with regard to the intent of the Impacted Material Placement Plan (IMPP), the current document is intended for guidance to the following organizations:

- On-Site Generators
- OSDF Construction Subcontractors
- OSDF Construction Quality Control Consultant

This document identifies the material categories and placement procedures to be used during placement of impacted material. It has always been DOE's and the OSDF Project's intent to require each generator to produce a plan that describes how the generator would comply with the WAC specified in the IMPP. These documents are not available at the present time due to an ongoing negotiation with OEPA and USEPA and how best to meet the specified WAC. With regard to physical WACs, the OSDF Project has and will be the independent check to place items in the OSDF. Currently, our designer, GeoSyntec Consultants Inc., is evaluating several classes of oversized items that currently do not have a final disposal option. A list of oversized material (e.g., items within the buildings) is

being developed. This list will set up categories of oversized material for GeoSyntec to consider. GeoSyntec will evaluate these categories and evaluate the acceptability of placing these items in the OSDF. With regard to putrescible waste, DOE will take measures to avoid odors. Unlike a sanitary landfill, there is no indicator of the amount of this type of waste. Currently, this type of waste would be categorized as Category 4 material and be placed in accordance with the corresponding procedures.

Currently DOE is in the process of performing a value engineering study on the viability of crushing concrete. This study will be a full life cycle cost analysis to evaluate the viability of crushing concrete. The treatment of shredded structural steel to attenuate uranium is in its infancy. Technology Development has evaluated this option and found it too unreliable to consider using at this time. As always, DOE will continue to monitor this developing technology and evaluate its potential use in the OSDF. Finally, the material classifications were developed to give the generators maximum flexibility in meeting the WAC. While the comment on the 18-inch steel beam is true, the reader hasn't taken into consideration the entire paragraph which places other restrictions on the placement of steel beams.

Action: As per response.

48) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.2 Pg #: 2-1 Line #: Citation 2 Code:
Original Comment #:

Comment: DOE has incorrectly cited Ohio Administrative Code (OAC) 3745-17-08 as the governing regulations for the particulate emissions from paved roads, unpaved roads and material storage piles. OAC 3745-31-05(A)(3) (please see Page A-53 of the OU2 ROD) requires that new sources employ the best available technology (BAT). The BAT determination is made on a case-by-case basis and this determination can be that in some cases BAT is the same as "reasonably available control measures" (RACM). This is not necessarily the case and it is not uncommon that BAT be more restrictive than RACM. Activities such as controlling fugitive dusts from paved and unpaved roads have time and again resulted in standards that are more stringent than RACM. Please see the following examples:

-paved roadways OAC 3745-17-12(F)(2)	1	minute exceedence in any 60-minute period
-unpaved roadways 3745-17-12(F)(1)	3	" " " " " " "
-material storage piles 3745-17-12(C)(2)	1	" " " " " " "

The Ohio EPA remains available to assist DOE in making the BAT determination.

Response: The OAC 3745-17-07(B) citations given in the Impacted Material Placement Plan and referred to in the comment are the Operable Unit 2- and Operable Unit 5-ROD-determined ARARs as pertinent to restriction of emission of fugitive dust. As stated in the response to OEPA's Original Comment #7 on the Intermediate Design Package submittal of the Impacted Material Placement Plan, these are the

ARARs determined by EPA (and concurred on by OEPA) in the Operable Unit 2 and Operable Unit 5 RODs as applicable for roadways, parking areas, and material storage piles.

The commentor also identifies OAC 3745-31-05 (A)(3), which is another ARAR identified in the OU2 and OU5 ROD. As stated in the response to OEPA Original Comment #7 on the Intermediate Design Package submittal of the Impacted Material Placement Plan, DOE considers this OAC 3745-31-05 (A)(3) requirement pertinent to new point sources of air pollution, such as material processing operations. Because OAC 3745-17-07 (B)(4)-(6) establishes standards for roadways and material storage piles, and the OU2 and OU5 RODs have determined these OAC 3745-17-07 (B)(4)-(6) requirements as ARARs for roadways and material storage piles, DOE has always intended to comply with these OAC 3745-17-07 (B)(4)-(6) requirements for the OSDF Project. DOE has always intended to comply with BAT standards for any new point sources.

DOE is planning to use water for dust suppression whenever it is needed to control fugitive emissions throughout the duration of the OSDF Project. DOE would like to work with OEPA to develop the specific methods and/or frequency of water application in order to minimize dust emissions.

Action: DOE will comply with the roadway and material storage pile fugitive emission limits stated in OAC 3745-17-07 (B)(4)-(6), as designated in the OU2 and OU5 RODs. A meeting or telephone conference call will be scheduled at your convenience to receive OEPA input on the methods of dust suppression to be employed at the OSDF.

49) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.3 Pg #: 3-3 Line #: 22 Code: c
Original Comment #:

Comment: This section gives the CM sole authority to choose the point at which waste waters are discharged to the on-site waste water system. To what extent are the managers of the AWWT system involved in this decision?

Response: This section was written in conjunction with the manager of the AWWT. The preferred alternative is to discharge storm water to the plant storm water system. Future considerations may require modification to the current plan; however, the AWWT Project Manager, David Brettschneider, concurs with the current approach.

I concur with the current approach for handling the storm waters at the OSDF.

David Brettschneider

Action: No action is required.

50) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 4.3 Pg #: 4-3 Line #: 32 Code:
Original Comment #:

Comment: How will the maximum dimension of general building rubble be determined and what method will be used to verify this?

Response: The maximum dimension of general building rubble will be determined by using a combination of a calibrated rod and visual inspection. Suspect debris will be measured to verify its acceptance.

Action: As per response.

51) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 4.3 Pg #: 4-3 Line #: 36 Code:
Original Comment #:

Comment: "Impacted materials brought to the OSDF should not be at such a high moisture content that impacted material placement activities should not be impeded." This is too vague and open to interpretation.

Response: This statement may be open to interpretation; however, it is intended to allow the OSDF subcontractor flexibility in placement of impacted materials. This statement allows the subcontractor the ability to mix wetter soils with dryer soils in order to achieve the required moisture and compaction. It is DOE's intent to keep the subcontractor from hauling material that flows or might leak out of the hauling units.

Action: As per response.

52) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 4.4 Pg #: 4-4 Line #: 3rd bullet Code:
Original Comment #:

Comment: It is unclear what is excluded here.

Response: The third bullet from Section 4.4 is an artifact from a previous version. It will be removed from the IMPD.

Action: As per response.

53) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 5.3.2 Pg #: 5-2 Line #: 2nd bullet Code:
Original Comment #:

Comment: Medical wastes are mentioned here. Who will make the determination what special procedures will be necessary to safely handle medical wastes? Is the CM qualified to make this determination?

Response: The organization in charge of the project health and safety is the Fluor Daniel Fernald Health and Safety Department. Special handling procedures will be developed by the Soils Characterization and Excavation Project to identify and properly package any medical wastes encountered while remediating the waste unit. With regard to the Qualifications of the CM, the CM will work in conjunction with the Health and Safety Manager for any safety related issues at the OSDF.

Action: No action is required.

54) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: A.3.4 Pg #: A.3-1 and 2 Line #: Code:
Original Comment #:

Comment: For convenience, these comments will be broken down into the headings as they appear on this page.

Steel Sidings There may be a typo here that completely changes the meaning of the sentence. "Loose truck loads of miscellaneous demolition debris containing steel sidings that can be spread in lifts not higher than 18 in. (460 mm) will be classified as Category 3 materials." We believe that this was intended to read "Category 2 materials" because Category 3 materials are those requiring individual placement which is inconsistent with the phrase "Loose truck loads". Furthermore the 18 inch criteria is the definition of category 2. In either case, loose truck loads of steel sidings are inconsistent with both definitions. That is, a loose truck load of steel siding does not meet the requirement of individual placement. Ohio EPA also takes issue with the contention that loose truck loads containing steel sidings can be effectively compacted in 18 inch lifts. All steel siding should be banded in stacks in a similar fashion as transite panels and treated as Category 3 items.

Steel Beams This is completely unacceptable. These beams should at a minimum be cut to facilitate handling and preferably be reduced to the size of pellets.

Tanks There should be a maximum size limit on tanks. Also, please add a sentence that commits to filling the voids.

Pipes This is unacceptable. These pipes should be cut to facilitate handling.

Miscellaneous Equipment It is completely unacceptable to defer these decisions to an "Impacted Materials Monitor". As mentioned in the major comment for the Impacted Materials Placement Plan, the Ohio EPA expects a complete listing of all over-size equipment from OU3 so that these decisions can be made in consultation with the regulators.

Response: DOE agrees with OEPA's comment on the Steel Sidings and will correct this typo. With regard to the placement of steel siding, it is intended to be placed as Category 2 material. The steel siding is no different than other Category 2

material. It can be put into the cell in 18-inch lifts and initially compacted with a bulldozer. After its placement, Category 1 material will be placed against and over the siding to provide the required structural requirements.

With regard to the steel beams, steel beams not designated for recycle can be placed and handled as described. A physical size criteria is included in the IMPP.

With regard to the tanks, currently there is a physical size limit in the IMPP. However, DOE is considering placement of tanks too small to be cut up yet too large to meet the current physical size limit. The key to placement of these tanks is the filling of voids to avoid future settlement. If DOE's design engineer (GeoSyntec) and the public agree to a process to place these tanks, DOE will look for concurrence from OEPA.

With regard to pipes, a physical size limit has been established. Pipes greater than 12 inches will be split before placement into the OSDF.

With regard to miscellaneous equipment, please see the response to Comment 47.

Action: As per response.

Systems Plan

The Ohio EPA has no comments on the Systems Plan.

Groundwater Monitoring Plan

55) Commenting Organization: Ohio EPA Commentor: DDAGW
Section #: 1.1 Pg #: 1-1 Line #: 14-16 Code: c
Original Comment #:

Comment: Lines 14 through 16 should be re-worded to highlight the system's limitations without erroneously implying that the system is not useful. It was agreed that monitoring the till would be difficult. Nevertheless, Ohio EPA has consistently maintained that a till monitoring system was a prerequisite to approval of a disposal facility over a sole-source aquifer. The ground water detection system in the Great Miami Aquifer is one way of compensating for the limitations of a till monitoring system.

Response: Agreed. Section 1.0 will be rewritten such that language indicating that a till monitoring system is not useful will be removed.

Action: As per response.

56) Commenting Organization: Ohio EPA Commentor: DDAGW
Section #: 4.4.1 Pg #: 4-8 Line #: Code: c
Original Comment #:

Comment: This section should also state that trend analysis was chosen due to difficulties distinguishing releases from the OSDF from existing ground water contamination.

Response: Text regarding the difficulties in distinguishing potential releases from the OSDF from existing groundwater contamination in the area of the OSDF will be added.

Action: As per response.

57) Commenting Organization: Ohio EPA Commentor: DDAGW
Section #: 4.4.2 Pg #: 4-8 Line #: 34-37 Code: c
Original Comment #:

Comment: This is not correct. Section 4.1 details the limitations of the till ground water monitoring system and Page 1.1 states that it is possible for a release to migrate through the till without intercepting the till monitoring system. As a result, it is incorrect to state that if "till monitoring wells do not indicate leakage from the OSDF has occurred, then it will be assumed that the OSDF is not the source.". If this condition occurs, then it will be up to DOE, Ohio EPA, and USEPA to determine the source of the contamination.

Response: The text will be changed from "...assumed that the OSDF is not the source." to "determined by Ohio EPA, USEPA, and DOE what the source of contamination may be."

Action: As per response.

58) Commenting Organization: Ohio EPA Commentor: DDAGW
Section #: 4.5 Pg #: 4-9 Line #: 1-2 Code: c
Original Comment #:

Comment: Leakage cannot be totally assessed by the till wells as mentioned in Sections 4.1 and 1.1. Though these wells are needed and useful, they will not detect all leaks. It is important that data from these wells be used within the till monitoring system's limitations.

Response: The following text will be added: "...secondary liner; however, till well monitoring can not be considered all conclusive."

Action: As per response.

000046

59) Commenting Organization: Ohio EPA Commentor: DDAGW
Section #: 8.4 Pg #: 2-1 Line #: Code: c
Original Comment #:

Comment: All data in the Site-Wide Environmental Database should be provided to Ohio EPA in a compatible electronic format. Additionally, DOE must put data into the SED in a timely manner.

Response: The following text will be added: "...file format. Data from the SED will be provided to the Ohio EPA in a compatible electronic format."

Action: As per response.

60) Commenting Organization: Ohio EPA Commentor: DERR
Section #: 4.4.2 Pg #: 4-8 Line #: 22 Code: c
Original Comment #:

Comment: This section includes the statement that liquid could enter the leak detection system from the clay liner by capillary action. This seems unlikely. The coarse, high-conductivity granular material in the leachate collection beds is unlikely to exert much of a capillary effect.

Response: Section 4.4.2, the text will be changed to "...be from sources other that from within a particular cell."

Action: As per response.

61) Commenting Organization: Ohio EPA Commentor: DERR
Section #: 5.3 Pg #: 5-1 Line #: Code:
Original Comment #:

Comment: The proposed list of analytes for ground water monitoring is much shorter than that of Appendix I, OAC 3745-27-10. The proposed list of analytes for ground water monitoring should be reviewed based on leachate analysis. If the leachate shows no other significant chemicals than those of the proposed list, then that list should be retained. However, if the leachate samples show a major component not on the list for ground water analysis, then the ground water list should be revised to include those extra components.

The list of analytes should be evaluated separately for each cell, because the waste streams feeding those cells will not be the same. Indeed, different operable units will be disposed of at different times and in different cells, so the character of the leachate can be expected to vary.

Response: Section 5.0 will be rewritten to include an expanded list of analytes for the leacheate collection system (LCS), leak detection (LDS), and glacial till. The analytes are those identified through both the Remedial Investigation and Feasibility Study. This list will be different from the Appendix I list; however, it is a list that reflects the analytes that are pertinent to the FEMP. The new

proposed list of analytes will be expanded to the 41 waste acceptance criteria constituents identified in the Final Record of Decision for Remedial Actions at Operable Unit 5 [DOE, 1996a]; the 4 previously identified "supplemental indicator parameters" will also be analyzed. As will be discussed in the revised Section 5, the 41 + 4 analytes will be sampled to establish the baseline for the LCS, LDS, and glacial till, if the volumes permit; if the volumes do not permit for the entire suite of 41 + 4 analytes, then a prioritization of analytes will occur.

Action: As per response.

62) Commenting Organization: Ohio EPA Commentor: DDAGW
Section #: General Pg #: Line #: Code:
Original Comment #:

Comment: The Groundwater Detection Monitoring Program lacks a detailed technical description of predicted ground water flow and GMA monitoring well placement. Location of monitoring wells should be technically justified so that DOE can demonstrate adequate ground water monitoring of all OSDF units for all anticipated ground water flow conditions.

Response: Agreed. However, the details for this are discussed in the Baseline Remedial Strategy Report, Remedial Design for Aquifer Restoration (Task 1), September 1996, as will be referred to and discussed in Section 4.2.2.1. Therefore, detailed discussion is not included in this report.

Action: Add reference to the Baseline Remedial Strategy Report, Remedial Design for Aquifer Restoration, September 1996 to Section 4.2.2.1.

Post-Closure Care and Inspections Plan

63) Commenting Organization: Ohio EPA Commentor: DERR
Section #: 9.3 Pg #: 9-5 Line #: 2 Code:
Original Comment #:

Comment: This section proposes that the action level for subsidence should be ponding of water to a depth of 1 foot. That is excessive. Subsidence at the surface may indicate subsidence and trough formation at the cap barrier layers. Such localized ponding could severely tax the barrier system, especially if any defects were present. The Ohio EPA proposes that any persistent ponding regardless of depth should warrant an investigation and corrective action.

Response: The text within 9.3 Maintenance and Repair, 9.3.2 Cap and Final Cover System, which is the subject of this comment, addresses routine custodial and preventative maintenance. In order to better reflect the intended continuity with the remainder of the subsection, in accordance with the comment, the text will be revised to read "When excessive ~~settlement is localized depression is~~ indicated by persistent water ponding ~~to a depth exceeding on (1) foot~~, repair will be performed...inspection/investigation. cCorrective maintenance, or

contingency repair of the final cover may be required for one of the following reasons:".

Action: The appropriate pages of text have been revised as identified above; as part of the submittal of these responses to comments, they and their facing pages are provided as change sheets to Revision G of the plan which was submitted to the EPA and OEPA on September 18, 1996.

64) Commenting Organization: Ohio EPA Commentor: ODH
Section #: 4.5 Pg #: Table 4-3 Line #: Code:
Original Comment #:

Comment: In the event ownership of any portion of the FEMP changes in the future, the draft notification in Table 4-3 should include ODH as ORC Section 3748.02 (A) designates ODH as the Ohio radiation control agency.

Response: In the absence of any specific direction as to title and address, DOE revised the table by adding the following as an addressee for receipt of the survey plat, based on the contact information DOE had on hand:

Director, Ohio Department of Health
ATTN: Contaminated Sites Group
36 E. Chestnut St.
Columbus, Ohio 43216
(800) 527-4439

This information appears in Revision G of the plan submitted to the EPA and OEPA on September 18, 1996. Subsequent information from ODH via OEPA indicates that the appropriate contact information is:

Ohio Department of Health
Chief of the Bureau of Radiological Protection
246 N. High St.
Columbus, Ohio 43266-3534
(614) 644-2727

Action: The appropriate page of Table 4-3 has been further revised per contact name and address identified immediately above; as part of the submittal of these responses to comments, it and its facing page are provided as a change sheet to Revision G of the plan which was submitted to the EPA and OEPA on September 18, 1996.

Specification Package

65) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 02225, Compacted Clay Liner and Cap Pg. #: 02225-3 Line #: 17 Code: c
Original Comment #

Comment: The specification for the material used to construct the compacted clay liner and cap has been changed to a 90% by weight on-site borrow and 10% by weight Wyoming bentonite mixture. This will significantly change the scope of this construction project and will require that a new test pad be constructed using the bentonite-on-site borrow mixture. The Drawings and Specifications should be expanded to include locations and procedures for preparing the bentonite-on site borrow mixture. Additions to the Drawings and Specifications should include the following:

- The proposed staging area for mixing located on the site layout map;
- The method to be used for mixing fill and bentonite described in the specifications;
- The equipment to be used for mixing described in the specifications;
- The location and method for storage of bentonite to prevent hydration before mixing;
- The method to be used for measurement of materials should be included to insure a proper mixture is prepared.

This information could be included as a specification for bentonite-on site borrow mixture.

Response: DOE intends to construct the compacted clay liner and cap from on-site low-permeability soils and does not intend to use a soil-bentonite mixture for clay liner and cap construction. The soil-bentonite mixture specified is used only for repair of liner or cap perforations resulting from quality assurance activities.

Action: The ambiguous wording of Section 02225 relating to the soil-bentonite mixture will be clarified in the FDP.

66) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 2.03 & 3.01 C Pg #: 02270-3&4 Line #: 1-7 & 30+ Code: c
Original Comment #:

Comment: Use of straw bales is not recommended. Silt fence should be used for sheet flow applications following the specifications in *Rainwater and Land Development*, ODNR-DSWC, 1996. Rock check dams should be used in channel flow applications per *Rainwater and Land Development*.

Response: The use of straw bales is considered appropriate in a variety of situations. The Construction Manager will review applications proposed by the Subcontractor in the Subcontractor SWMEC Plan. Applications not deemed appropriate will not be approved.

Action: No action is required.

67) Commenting Organization: Ohio EPA Commentor: DERR
Section #: 02772 Pg #: 02772-11 Line #: Table 02772-1 Code:
Original Comment #:

Comment: The hydraulic conductivity of the GCL should be specified as maximum not minimum.

Response: The hydraulic conductivity of the GCL will be specified as a maximum in the FDP.

Action: As per response.

Design Criteria Package

68) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.5.2 A Pg #: 2-49 Line #: Code:
Original Comment #:

Comment: The contingency plan mentioned here should be added to the list of deliverables on Page 1-13. A schedule for the development , review and approval of the contingency plan should be provided.

Response: The wording on Page 2-44 has been revised to indicate that required response actions will be detailed in the OSDF Ground Water Monitoring Plan. The OSDF Ground Water Monitoring Plan will be added to the list of deliverables on Pages 1-13 and 1-20.

Action: As per response.

69) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 2.8.3 Pg #: 2-92 Line #: Temporary Channels Code:
Original Comment #:

Comment: Channels should be stabilized as soon as possible and not longer than 10 days after installation. Channel outlets should function with a minimum of erosion and dissipate runoff velocity prior to discharge. The Ohio EPA recommend adding channel grade-stabilization design information (see *Rainwater and Land Development*, 1996, Page 152, and "Standard and Specification for Temporary Swale" attached).

Response: The design criteria for erosion control measures references the SWMEC Plan which references the Rainwater and Land Development manual.

Action: No action is required.

70) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 2.8.3 Pg #: 2-96 Line #: Code:
Original Comment #:

Comment: Calculations are required for temporary erosion control, for example the maximum drainage area for silt fence use is based on the slope of the drainage area (*Rainwater and Land Development*, 1996, Page 119), temporary diversion stabilization is based upon the slope and the drainage area (*Rainwater and Land Development*, 1996, Page 152).

Response: See response to Comment 69 above.

Action: No action is required.

71) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 2.8.4 A Pg #: 2-96 Line #: 1st minor bullet Code:
Original Comment #:

Comment: This bullet states that "Runoff from the 2,000-year, 24-hour storm event should be allowed to sheet flow from the toe of the OSDF final cover." however the next bullet describes the design criteria of runoff from the toe of the OSDF final cover. It appears as though the intent of the first bullet is to describe the runoff flow to the toe and should therefor read "Runoff from the 2,000-year, 24-hour storm event should be allowed to sheet flow to the toe of the OSDF final cover."

Response: The DCP will be revised in the FDP as recommended.

Action: As per response.

72) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 2.10.1 Pg #: 2-114 Line #: last bullet Code:
Original Comment #:

Comment: Erosion and sediment controls should be installed prior to excavation.

Response: The DCP will be revised in the FDP to state, "Erosion and sediment controls should be implemented in the borrow area prior to excavation, through borrow activities, and in conjunction with restoration activities."

Action: As per response.

73) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 2.10.2.4 A Pg #: 2-119 Line #: Sediment basins Code:
Original Comment #:

Comment: These design criteria should follow the replacement for the cited reference (i.e. *Rainwater and Land Development*, ODNR, 1996). In this updated edition the sediment basin must be sized for the entire drainage area contributing to the basin, not only the disturbed area.

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Response: The DCP will be revised in the FDP to conform to the latest reference.

Action: As per response.

74) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 2.10.3 & 1.9 Pg #: 2-122 & 1-22 Line #: References Code:
Original Comment #:

Comment: Please include the new edition of *Water Management and Sediment Control for Urbanized Areas*, USDA-SCS, 1987 which is titled *Rainwater and Land Development*, ODNR-DSWC, 1996.

Response: The latest reference will be included in both lists in the DCP of the FDP.

Action: As per response.

75) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.2.8 Pg #: 3-16 Line #: Code:
Original Comment #:

Comment: The value engineering documentation should be added to the list of deliverables on Page 1-13.

Response: The prefinal DCP contained a requirement for value engineering documentation deliverable on Page 1-20.

Action: No action is required.

76) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.2.9 Pg #: 3-16 Line #: Code:
Original Comment #:

Comment: The design documentation should also be added to the list of deliverables on Page 1-13.

Response: The prefinal DCP contained a requirement for a design documentation deliverable on Page 1-20.

Action: No action is required.

77) Commenting Organization: Ohio EPA Commentor: DSW
Section #: Appendix B Pg #: 6-5 Line #: 24 Code:
Original Comment #:

Comment: "Biotic barrier" should read "biointrusion barrier".

Response: The functional requirements in Appendix B were established to direct development of the DCP and are provided in the DCP for reference. As they have been finalized, no changes will be made to Appendix B. A careful edit of

the body of the DCP has been made to ensure that the words "biointrusion barrier" are used consistently.

Action: No action is required.

Calculations Package

78) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 1.1 Pg #: 21 of 22 Line #: Erosion and Sediment Control Code:
Original Comment #:

Comment: The calculations for the "Borrow Area Sediment Basin" are taken from an outdated edition of the Soil and Conservation Service, the new edition, *Rainwater and Land Development*, ODNR-DSWC, 1996 should be used. The basin must be sized for the entire drainage area, not just the disturbed area.

Response: The borrow area will be developed in stages and at no time will the entire borrow area be disturbed at once. The Sediment Basin in the borrow area is designed to handle the worst-case condition. This condition is when the entire borrow area and associated tributary are draining towards the sediment basin, and 15 acres of the borrow area are disturbed. The basin sizing method in "Water Management and Sediment Control for Urbanizing Areas" is more rigorous than the basin sizing method in the 1996 document titled "Rainwater and Land Development". GeoSyntec also spoke with Mr. Dan Mecklenberg who prepared "Rainwater and Land Development". Mr. Mecklenberg confirmed that a basin designed to meet the requirements in "Water Management and Sediment Control for Urbanizing Areas" also meet the requirements given in "Rainwater and Land Development."

Action: No action is required.

79) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 10.1 LTS Gravity Line Design, Executive Summary Pg. #: 2 of 2 Line #: Code:
Original Comment #

Comment: At the second bullet on this page it is stated that for the storm design flow rate "(flow should be regulated with valves in the LCS gravity line to obtain maximum storm design flow rate of 200 gpm)." There are two issues to be addressed here.

1. The design flow rate of the pumps at the permanent lift station is 200 gpm and they are to be operated one at a time. There should be some safety factor for flow at the lift station. The pumps should be able to remove water faster than it is delivered to the lift station, so the maximum flow to the lift station should be less than 200 gpm.

2. How will the proper valve adjustment be determined to insure a maximum flow rate of 200 gpm to the LCS gravity drain line? What steps will be

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taken to insure these valves are not readjusted? Is there a better device for regulating flow, such as an orifice plate?

3. Has the maximum allowable head behind this control valve that would generate 200 gpm of flow been calculated? Based on the hydrograph of flow from each cell during the design storm, would that head be exceeded at any time?

Response: The design flow rate for each pump at the permanent lift station is 200 gpm at 190 ft. total design head (TDH). The controls are designed in a lead/lag configuration allowing simultaneous operation of both pumps in parrellel for a combined flow of approximately 240 gpm at 220 ft. TDH.

The valves can be positioned in a percent open setting to allow 200 gpm or lesser desired setting. The valves can be locked in that position. Orifice plates are also a possibility and will be investigated.

The maximum potential (worst case) flow of 334 gpm is presented in the calculation package in Section 10 of the Supplement to Volumes 1-4. This is based on a 25-year, 24-hour storm event. Should this event occur, water will be "stored" within each cell and released at the rate of the respective LCS valve setting.

Action: Investigate use of orifices.

80) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: 10.3 Temporary Lift Station and Manhole Design Pg. #: 2 of 12 Line #: Code:
Original Comment #

Comment: In the data verification for hydrostatic uplift of the manholes, the actual measured perched water table elevations were used. This is not consistent with the assumption made for the hydrostatic uplift of the liner system. Is there a reason these should not be consistent?

Response: The Design-Basis Perched Ground Water Contour Drawing (Figure 4) developed for the hydrostatic uplift of the liner system calculations was used to determine the elevation of the ground water at each manhole location. The results of the analysis were presented in Table 1. The manhole location with the maximum elevation of perched groundwater above the manhole base was selected for the hydrostatic uplift design calculations for the manholes. This method of locating the perched ground water elevation is consistent with the method utilized for the hydrostatic uplift of the liner system calculations.

Action: No action is required.

Design Drawings

81) Commenting Organization: Ohio EPA Commentor: DSW
Section #: Various drawings Pg #: Borrow pit Line #: Code: c
Original Comment #:

Comment: The borrow pit has been changed from being subdivided into smaller units each with its own sediment basin to one large basin. The sub-unit each with its own basin would have smaller areas of disturbed area earth exposed at any one time, those areas not in use could be stabilized. Please explain why this was changed.

Response: As per the DCP, a maximum of 15 acres can be disturbed at one time in the borrow area. The sedimentation basin in the borrow area is designed to handle flows for the worst case scenario which is the tributary of the entire borrow area with 15 acres of the borrow area disturbed. It is more cost effective to have one basin then to have three. Also see response to Comment 78 above.

Action: No action is required.

82) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Drawing #: 90X-6000-X-00003 Sheet #: X-3 Section #: Code: c
Original Comment #

Comment: Existing ground elevation contours line type on the air photo do not match the line type for existing ground elevation contours shown in the legend.

Response: The contour line type will be corrected in the FDP.

Action: As per response.

83) Commenting Organization: Ohio EPA Commentor: DSW
Section #: Drawing 90X-6000-G-00016 Pg #: Line #: Code:
Original Comment #:

Comment: An additional temporary sediment basin is located east of the sediment basin shown. This second sediment basin should also be shown.

Response: Temporary Sedimentation Basin 1A will be shown on Sheet 90X-6000-G-00015.

Action: As per response.

84) Commenting Organization: Ohio EPA Commentor: DSW
Section #: Drawing 90X-6000-G-00018 and others Pg #: Line #: Code:
Original Comment #:

Comment: This drawing indicates that the leachate will be piped to the Biodenitrification Surge Lagoon, as does the SWECP, Page 1-1, Lines 44-55, and the DCP on Page 2-50, Section 2.5.3 A. However in other parts of the package the leachate is said to be piped to the stormwater drainage control (SWECP, Page 3-2, Lines 28-

29, Page 3-3, Lines 4-5, Page 3-3, Lines 10-12, and the DCP Page 2-10) or the AWWT (Permitting Plan and Substantive Requirements, Page 2-1, Lines 19-23). As the leachate should have a higher contaminant level than the stormwater, the leachate should be pumped directly to the AWWT for treatment.

Response: The above documents will be reviewed and revised to indicate that leachate will be piped to the Biodentrification Surge Lagoon.

Action: As per response.

85) Commenting Organization: Ohio EPA Commentor: DSW
Section #: Drawing 90X-6000-G-00020 Pg #: Line #: Code:
Original Comment #:

Comment: It appears from this drawing and the referenced detail #43 on G-31 that the stormwater management system and the leachate collection system are connected so that the stormwater will flow into the leachate collection system. This should be separate.

Response: The gravity drainage inlet structures drain to surface water channels. The leachate collection system is below the gravity drainage inlet structures and is entirely separate.

Action: No action is required.

86) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Drawing #: 90X-6000-G-001707 Sheet #: G-40 Section #: Code:
Original Comment #

Comment: As stated in Note 4, the horizontal monitoring wells are not shown on the grading drawings G-5 to G-11. However, it is not apparent and is not stated that the horizontal monitoring wells are to be installed at each cell. Section E on Sheet G-11 shows only one horizontal monitoring well. It would be appropriate to install monitoring wells at every cell. Please include the locations of all horizontal monitoring wells on the appropriate sheets.

Response: Plans will be revised to show monitoring wells. A control point table will be added to Sheet G-40 to indicate location of monitoring wells.

Action: As per response.

87) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Drawing #: 90X-6000-G-001707 Sheet #: G-40 Section #: Code:
Original Comment #

Comment: The bollard posts shown on Section 126 seem to be located in the access corridor. Will this create a problem for traffic on the access corridor?

Response: The bollard posts are located adjacent to the access corridor. The location is considered acceptable considering the limited traffic using the access corridor.

Action: No action is required.

88) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Drawing #: 90X-6000-M-00052 Sheet #: M-9 Section #: Code:
Original Comment #

Comment: What is the purpose of the 2" overflow pipe shown on Section A? It appears that this pipe breaches the primary containment.

Response: The 2" overflow pipe was placed in the wall of the permanent lift station riser to provide an additional level of redundancy for the alarm systems. In order for liquid to reach the overflow pipe, the following failure scenario would have to occur:

The level transmitter in the wet well would fail to a liquid level below the high-high level. This type of failure is unlikely because the level transmitter is designed to fail to the high-high level. The failure of the level transmitter would prevent the activation of the motor-operated ball valve and could allow the accumulation of liquid in the permanent lift station if the inflow exceeds the pump capacity or if the pumps are inoperable. The overflow pipe would allow the rising liquid in the permanent lift station to enter the annular space and trigger the alarm for the secondary containment before the leachate reached the top of the riser. This redundant alarm capacity would allow an additional opportunity for response to prevent an uncontrolled release of liquid from the access cover.

The additional alarm redundancy provided by the overflow pipe and the resulting potential to prevent a spill would appear to offset any benefit of maintaining complete separation between the wet well and the annular space at a time when overflow is imminent.

Action: No action is required.

Leachate Conveyance System Package

89) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Drawing #: 92X-5900-N-00322 Sheet #: N-0002 Section #: Code:
Original Comment #

Comment: Note 5 states that a difference of 5% between the flow meters in the first and eleventh manholes will trigger an alarm condition. The difference will be 10% before the force main pumps are automatically shut off, as stated in Note 6. This is the only form of leak detection for this double contained leachate transmission system. It is possible that a leak in the primary containment pipe which is less that 5% of the total flow could fill and then breach the secondary

containment without being detected. Placing liquid level indicators in each of the Clean Out Manholes could eliminate this potential problem. This modification is highly recommended, as it would bring the leachate conveyance system leak detection system up to par with the OSDF leachate gravity collection piping and gravity leak detection piping.

Response: The 5% differential is intended to reflect a sudden pipe or joint rupture in which case the pumps stop and alarm is indicated. Yes, it is possible that a less than 5% leak could accumulate; however, the operation and maintenance of the entire system shall require periodic inspections and logging of each cleanout manhole by the facility owner. These inspections would identify any liquid accumulation in the cleanouts and prompt any repairs needed.

This periodic manual inspection of cleanouts is presently being used on the RA-30 Seeps Control from the Active and Inactive Flyash Piles.

Action: Ensure monthly inspections of cleanout manholes as written into the Operation and Maintenance Manual for the Leachate Transmission System.

Remedial Action Work Plan

The Ohio EPA has no comments on the Remedial Action Work Plan.

Attachment 3

Change Sheets to

Post-Closure Care and Inspection Plan

Table 4-3
NOTICE IN DEED OR OTHER TRANSFER INSTRUMENT

Ohio Solid Waste Rules	Ohio Hazardous Waste Rules	CERCLA	FEMP
File a survey plat with each of the following, showing the unit(s) of the sanitary landfill facility and information describing the acreage, exact location, depth, volume, and nature of the solid waste deposited in the unit(s) of the sanitary landfill facility:	5 I have filed a survey plat with each of the following, showing the location and dimensions of the disposal facility and its individual units, and a record of the type, location and quantity of waste material disposed within each unit of the disposal facility:		5 I have filed a survey plat with each of the following, showing the location & dimensions of the On-Site Disposal Facility & its individual cells/phases, and a record of the type, location & quantity of remediation waste/ impacted material disposed within the On-Site Disposal Facility:
• *name & address of local zoning authority, or authority with jurisdiction over local land use*	• *name & address of local zoning authority, or authority with jurisdiction over local land use*		• Butler County Recorder's Office 130 High Street Hamilton, Ohio 45001 (513-887-3409) AND Hamilton County Recorder's Office ATTN: Registered Land Recordings 138 E. Court Street, Cincinnati, Ohio 45202 (513-632-8336)
• *name & address of the board of health having jurisdiction*			• Butler County Health Department ATTN: Environmental 202 S. Monument Street Hamilton, Ohio 45001 (513-887-5228) AND Hamilton County Environmental Health Division 11499 Chester Road, Suite 1500 Sharonville, Ohio (513-326-4500) AND Ohio Department of Health Chief, Bureau of Radiological Protection 246 N. High St. Columbus, Ohio 43266-3534 (614) 644-2727
	• Regional Administrator of EPA Region 5		• EPA Region 5 Administrator 77 W. Jackson Blvd Chicago, Illinois, 60604-3590

Table 4-3
NOTICE IN DEED OR OTHER TRANSFER INSTRUMENT

Ohio Solid Waste Rules	Ohio Hazardous Waste Rules	CERCLA	FEMP
○ Ohio Director of Environmental Protection	○ Ohio Director of Environmental Protection		○ Ohio Director of Environmental Protection 1800 Watermark Drive P.O. Box 1049 Columbus, Ohio 43266-0149
		A covenant warranting that— ○ all remedial action necessary to protect the human health & the environment with respect to any such hazardous substances remaining on the property has been taken before the date of such transfer, and ○ any additional remedial action found to be necessary after the date of such transfer shall be conducted by the United States.	A covenant warranting that— ○ all remedial action necessary to protect the human health & the environment with respect to any such hazardous substances remaining on the property has been taken before the date of such transfer, and ○ any additional remedial action found to be necessary after the date of such transfer shall be conducted by the United States.

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9.0 CUSTODIAL MAINTENANCE AND CONTINGENCY REPAIR

9.1 Introduction

This section explains the procedures to be used by the DOE to determine when maintenance or contingency repairs are needed at the FEMP OSDF. In general, the decision to conduct maintenance or contingency repair will be based on the results of follow-up site inspections or contingency site inspections (see Section 8.0 for both), which assess problems at the site.

This section will establish maintenance activities and their frequency, fulfilling the requirements to do so established in the appropriate regulations [Ohio hazardous waste rules OAC 3745-66-18(A) & (C) in lieu of federal hazardous waste regulations 40 CFR §§265.118(c)(2) and 264.118(b)(2)]. The following subsections address custodial maintenance of the security system (*e.g.*, fencing, gates, signage) and the impacted materials containment system as summarized below.

SECURITY SYSTEM

- Repair/replacement of sections of fence(s) and gates due to normal wear, severe weather conditions, vandalism
- Replacement of warning signs for similar reasons

IMPACTED MATERIALS CONTAINMENT SYSTEM

- Maintain the integrity and effectiveness of the final cover, including making repairs to the cap/cover as necessary to correct the effects of settling, dead vegetation, subsidence, erosion, leachate outbreaks, or other events [Ohio solid waste rule OAC 3745-27-14(A), and Ohio hazardous waste landfill rule OAC 3745-68-10 in lieu of federal hazardous waste regulation 40 CFR §265.310]
- Mowing
- Seeding and mulching repaired areas
- Maintaining surface water run-on and run-off drainage features to prevent erosion of or other damage to the final cover [Ohio solid waste rule OAC 3745-27-14(A), and Ohio hazardous waste landfill rule OAC 3745-68-10 in lieu of federal hazardous waste regulation 40 CFR §265.310]
- Control of burrowing animals

9.2 Conditions Requiring Maintenance or Repair Actions

Inspection reports and monitoring results will be reviewed and site conditions will be compared from inspection to inspection so that trends of changing conditions can be determined. Identifiable trends will provide a means for predicting when maintenance or repair will be needed. The DOE, in conjunction with EPA and

OEPA, will decide whether or not to initiate custodial maintenance or contingency repair. After the decision to initiate maintenance or a contingency repair, a statement of work will be prepared for the work to be performed. The maintenance or repair action required to correct a site problem will be dependent upon the nature of the problem. Although the details of maintenance or repair actions that may be needed throughout the post-closure care period cannot be reliably predicted in advance, examples of conditions which may require custodial maintenance or which may trigger contingency repair are outlined in Table 9-1, along with the appropriate action(s).

When compared with contingency repair, custodial maintenance is expected to be generally less costly, smaller in scale, and more frequent in occurrence. In contrast, contingency repairs are very unlikely to be needed; however, repair costs may be more substantial due to the size of the work force and technical skills required for repairs.

9.3 Maintenance and Repair

The following subsections discuss custodial maintenance for the security system, cap and final cover, and the run-on and run-off drainage features.

9.3.1 Security System

The security system established for the FEMP OSDF includes fencing, gates, locks, and warning signs. Routine custodial maintenance or repair of the security systems includes visual inspection and repair or replacement of the affected components. Possible problems include deterioration, erosion, or frost heave of fence post anchors resulting in fence damage. Normal wear, deterioration, and vandalism is also possible on fencing, gates, locks, and signs. Table 9-2 presents the inspection and maintenance activities for these features. These activities will be performed as needed as identified during the routine inspections (see Section 7.0).

9.3.2 Cap and Final Cover System

Routine custodial and preventative maintenance of the cap and final cover includes visual inspection of benchmark integrity, upkeep of the vegetative cover, general mowing, clearing of debris, removal of woody weeds and seedlings, and reseeding. These activities will be performed as needed as identified during the routine inspections (see Section 7.0). Table 9-3 presents the custodial maintenance schedule for these features. When excessive localized depression is indicated by persistent water ponding, repair will be performed.

Note that the need for, and frequency of, grass cutting will depend on the final seed mix selected for the OSDF final cover systems. Mowing shall occur at least once annually (in the late fall) at a time when the final cover system is reasonably dry. Mowing equipment shall not cause rutting or disturbance of topsoil. More frequent mowing will be specified, if needed, in a subsequent modification to this PCCI Plan (see Section 12.0).

Table 9-3
CUSTODIAL MAINTENANCE SCHEDULE

Each April/May	• Implement treatments or repairs as indicated by September inspection. • Re-seed, lime and fertilize on 3-year cycles, as needed.
Each September	• Inspect site to determine adequacy of perennial vegetative (grass) cover, and to delineate erosion problems.
Each October	• Mow area inside fence to control invasion by woody species. • Evaluate options for less frequent mowing, and/or use of herbicides which affect only woody species.

Woody reproduction that develops on the OSDF final cover systems shall be eliminated mechanically, chemically, or by fire. Many woody species maintain the root systems when cut and rapidly resprout. The root system continues to grow through repeated cuttings and can become extensive. For this reason, chemical herbicides (spraying of individual trees and shrubs) or fir shall be preferred for woody species control, as eradication of the whole plant including the root system is a primary goal. A combination of mechanical and chemical treatment where cut stumps are treated with herbicide to prevent resprouting may also be considered. The most effective method for managing woody species vegetation will be evaluated for the OSDF by DOE based on available equipment, expertise, and cost.

Inspection/investigation, cCorrective maintenance or contingency repair of the final cover may be required for one of the following reasons:

- formation of localized depressions caused by subsidence of the emplaced impacted materials;
- progressive deterioration of the cover caused by erosion; or
- destruction of a portion of the final cover by some gross physical event.

Settlement is not expected to be a significant problem as the OSDF contains little putrescible waste. In the case of localized depressions, it will likely be necessary to strip existing topsoil in the affected area and stockpile it in an adjacent area. General soil would then be used to fill the settled area to restore uniform grades in order to promote proper drainage. Topsoil would then be replaced. Where this phenomenon occurs in the upper cover, simple regrading and filling of the depression with compacted fill will likely be satisfactory. All affected areas will be reseeded and mulched immediately upon completion of repairs. The following are typical steps to repair excessive settlement:

1. When maintenance is required, the amount of soil needed should be estimated and arrangements for stockpiling or delivery should be made in advance in order to minimize the amount of time the repair area is disturbed.
2. Install temporary silt control and surface water controls.
3. Remove and stockpile topsoil and rooting soil layers. Segregate as necessary.
4. Clay can be added to the existing clay portion of the cover or the existing clay (or portions thereof) can be excavated and appropriate fill placed to bring the area to acceptable grades. Adding clay is preferred since the geosynthetic layer is not exposed and tie-in to adjacent clay is not necessary.
5. Document clay placement and compaction in accordance with the original construction quality assurance program (see *OSDF CQA Plan* [GeoSyntec, 1996c]).
6. Replace rooting and topsoil layers and revegetate. Care should be taken during final grading to assure the area is tracked perpendicular to the slope to minimize channelization of surface water.

Progressive deterioration of the cover caused by erosion will likely be addressed by reconstruction of the cover in that area and by amelioration of the erosion problem. This may involve some general regrading in the area to modify drainage and/or the use of temporary drainage structures and controls to reduce run-off velocities until vegetation has been re-established.

9.3.3 Run-on and Run-off Drainage Features

Diversion and drainage channels surrounding the OSDF function to collect run-off and divert run-on. The channels may require mowing and, from time to time, reshaping to control the run-off in a controlled manner. Vegetative growth in and around diversion channels will be maintained by periodic mowing and clearing. Mowing of the vegetation on the same schedule as the OSDF final cover system (see Section 9.3.2) will ensure proper maintenance of the channels. Any large plants or seedlings will be removed to prevent sediment buildup and damage caused by roots. Reseeding and mulching will be performed as needed in bare areas to prevent excessive erosion.

During the routine inspections (see Section 7.0), the drainage channel(s) will be examined for erosion. Any problems identified by inspections will be repaired to conform as closely as possible to the original construction specifications and drawings. To the extent possible, appropriate measures will be taken to prevent problems from recurring.

Maintenance of the diversion channel system might be needed in areas of excessive sediment buildup, sloughing of banks, or plugging of culverts due to sediment and vegetation buildup. The grade control structures — rocks placed at an inlet, outlet, or along the length of a drainage channel — might also require maintenance for sediment and vegetation buildup. Appropriate actions will be taken to address these situations, including cleaning out and/or recontouring channels, repair of banks, and unplugging of culverts. Table 9-4 presents the